



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Northwood High School
Date of Test Report	4/26/2022
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	129
# Rooms \geq 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	2.6 pCi/L

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



April 26, 2022

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

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

Location: Northwood High School
919 University Blvd., West
Silver Spring, MD 20901

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 Northwood HS, located at 919 University Blvd., West Silver Spring, MD 20901 (subject site).

Scope of Services:

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

KCI visited the site on March 1, 2022 and deployed one hundred and thirty eight (138) 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 March 4, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a

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

Evaluation of Testing Conditions:

These tests represent:

- Follow-up to biennial post-mitigation testing.

These tests were conducted to:

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

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the 20s and high temperatures ranged from the high 50s to the low 60s Fahrenheit. Maximum sustained winds ranged from 9-17 miles per hour. Average humidity was around 40% with 0 inches of precipitation (rain) was recorded during testing period.

Results:

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

The results of the radon test analysis indicated the following:

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

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

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

Sincerely,



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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Check, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

OC- Quality Control

Table 1- Radon Testing Results		
Northwood HS		
Test Period: 03/01/2022 - 03/04/2022		
Kit Number	Room / Area	Result
11130668	120	< 0.3
11130605	107A	< 0.3
11130688	115A	< 0.3
11130643	A103	0.8
11130654	A104	< 0.3
11130649	A105	< 0.3
11130655	A112	< 0.3
11130657	A113	< 0.3
11130659	A114	0.8
11130661	A115	1.2
11130663	A116	0.9
11130660	A121	1.1
11130658	A122	< 0.3
11130656	A123	0.5
11130652	A125	< 0.3
11130648	A126	< 0.3
11130651	A126	< 0.3
11130653	A128	< 0.3
11130635	A129	< 0.3
11130636	A130	< 0.3
11130642	A131	0.8
11130641	A132	1.0
11130858	A220	< 0.3
11130865	A225	0.6
11130850	A230	< 0.3
11130627	AUDITORIUM 1	1.2
11130633	AUDITORIUM 2	1.1
11130884	B105	< 0.3
11130609	B110	0.6
11130617	B110	< 0.3
11130836	B110C	< 0.3
11130803	B110D	< 0.3
11130604	B110E	< 0.3
11130610	B110F	< 0.3
11130618	B110H	< 0.3
11130804	B110H	< 0.3
11130819	B110I	< 0.3
11130802	B115	< 0.3
11130801	B115A	< 0.3
11130820	B115B	< 0.3
11130830	B115C	< 0.3
11130822	B115D	< 0.3

Table 1- Radon Testing Results		
Northwood HS		
Test Period: 03/01/2022 - 03/04/2022		
Kit Number	Room / Area	Result
11130825	B115E	< 0.3
11130839	B135	< 0.3
11130840	B135	< 0.3
11130833	B135A	< 0.3
11130826	B135B	< 0.3
11130834	B135C	< 0.3
11130823	B139	< 0.3
11130832	B139C	< 0.3
11130613	B148	< 0.3
11130614	B148A	< 0.3
11130615	B148B	< 0.3
11130878	B207	< 0.3
11130634	C100	0.5
11130630	C1001	< 0.3
11130638	C100A	< 0.3
11130637	C100B	0.5
11130628	C100D	1.0
11130640	C100E	0.6
11130639	C100F	1.1
11130632	C100G	0.8
11130631	C100H	< 0.3
11130645	C100J	< 0.3
11130647	C100J	0.5
11130619	C101	< 0.3
11130624	C102	< 0.3
11130620	C103	< 0.3
11130623	C104	< 0.3
11130621	C105	< 0.3
11130622	C106	< 0.3
11130625	C107	0.8
11130646	C110J	0.6
11130626	C116	< 0.3
11130629	C116	< 0.3
11130835	CAFE CONFERENCE	0.9
11130824	CAFETERIA	0.7
11130842	CAFETERIA	< 0.3
11130817	DANCE STUDIO	2.6
11130818	DANCE STUDIO	2.6
11130827	E101	< 0.3
11130838	E101A	0.5
11130821	E101B	< 0.3
11130845	E101C	< 0.3

Table 1- Radon Testing Results		
Northwood HS		
Test Period: 03/01/2022 - 03/04/2022		
Kit Number	Room / Area	Result
11130828	E101D	< 0.3
11130611	E103	< 0.3
11130829	E104	< 0.3
11130831	E104	< 0.3
11130837	E104	0.5
11130607	E106	0.6
11130606	E107	< 0.3
11130612	E112	0.6
11130608	E115	< 0.3
11130601	E120	< 0.3
11130859	E201	< 0.3
11130603	F107	< 0.3
11130700	F107	0.7
11130602	F110	< 0.3
11130697	F111	< 0.3
11130696	F112	< 0.3
11130699	F113	< 0.3
11130679	F115	< 0.3
11130686	F115 OFFICE	< 0.3
11130677	F117	0.7
11130676	F117A	1.2
11130684	F117A	1.0
11130678	F117B	0.7
11130667	F120	0.5
11130669	F120	0.7
11130650	F122A	< 0.3
11130671	F122B	< 0.3
11130670	F122C	< 0.3
11130687	F124	< 0.3
11130675	F127	< 0.3
11130691	F128	< 0.3
11130698	F134	< 0.3
11130844	G109	< 0.3
11130853	G118	< 0.3
11130848	G121	< 0.3
11130852	G122	< 0.3
11130860	G122	< 0.3
11130869	G124	< 0.3
11130843	G128	< 0.3
11130877	GREENHOUSE	< 0.3
11130666	HEALTH W4	< 0.3
11130841	MAIN GYM	1.0

Table 1- Radon Testing Results		
Northwood HS		
Test Period: 03/01/2022 - 03/04/2022		
Kit Number	Room / Area	Result
11130849	MAIN GYM	0.8
11130680	MEDIA CENTER	< 0.3
11130681	MEDIA CENTER	< 0.3
11130692	W10	< 0.3
11130693	W11	< 0.3
11130695	W12	< 0.3
11130690	W125	< 0.3
11130685	W15	< 0.3
11130694	W16	< 0.3
11130682	W2	< 0.3
11130689	W3	< 0.3
11130674	W4	< 0.3
11130672	W7	< 0.3
11130673	W7	< 0.3
11130846	WEIGHT ROOM	1.7
11130851	WEIGHT ROOM	1.7

Table 2- Radon Testing Results			
Northwood HS			
Test Period: 03/01/2022 - 03/04/2022			
Kit Number	QC Type	Room / Area	Result
11130629	D	C116	< 0.3
11130647	D	C100j	0.5
11130645	FB	C100j	< 0.3
11130651	D	A126	< 0.3
11130684	D	F117a	1.0
11130700	D	F107	0.7
11130609	D	B110	0.6
11130840	D	B135	< 0.3
11130831	FB	E104	< 0.3
11130829	D	E104	< 0.3
11130852	D	G122	< 0.3
11130861	OB	OFFICE BLANK	< 0.3
11130854	TB	TRAVEL BLANK	< 0.3

ATTACHMENT C

Laboratory Analytical Results

March 8, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
NORTHWOOD HS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11130618	B110H	2022-03-01 @ 9:00 am	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130842	CAFETERIA	2022-03-01 @ 9:00 am	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130843	G128	2022-03-01 @ 9:00 am	2022-03-04 @ 11:00 am	< 0.3	2022-03-07
11130666	HEALTH W4	2022-03-01 @ 9:00 am	2022-03-04 @ 11:00 am	< 0.3	2022-03-07

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

Radon test result report for:
NORTHWOOD HS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11130605	107A	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-07
11130688	115A	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-07
11130668	120	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11130643	A103	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.8 ± 0.3	2022-03-07
11130654	A104	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-07
11130649	A105	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-07
11130655	A112	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-07
11130657	A113	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11130659	A114	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	0.8 ± 0.3	2022-03-08
11130661	A115	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	1.2 ± 0.3	2022-03-08
11130663	A116	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	0.9 ± 0.3	2022-03-08
11130660	A121	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	1.1 ± 0.3	2022-03-08
11130658	A122	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11130656	A123	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	0.5 ± 0.3	2022-03-08
11130652	A125	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-07
11130651	A126	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-07
11130648	A126	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11130653	A128	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-07
11130635	A129	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11130636	A130	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11130642	A131	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.8 ± 0.3	2022-03-07
11130641	A132	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	1.0 ± 0.3	2022-03-07
11130858	A220	2022-03-01 @ 2:00 pm	2022-03-04 @ 12:00 pm	< 0.3	2022-03-08
11130865	A225	2022-03-01 @ 2:00 pm	2022-03-04 @ 12:00 pm	0.6 ± 0.3	2022-03-08
11130850	A230	2022-03-01 @ 2:00 pm	2022-03-04 @ 12:00 pm	< 0.3	2022-03-08
11130627	AUDITORIUM 1	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	1.2 ± 0.3	2022-03-08
11130633	AUDITORIUM 2	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	1.1 ± 0.3	2022-03-08
11130884	B105	2022-03-01 @ 2:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130609	B110	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	0.6 ± 0.3	2022-03-08
11130617	B110	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130836	B110C	2022-03-01 @ 12:00 pm	2022-03-04 @ 1:00 pm	< 0.3	2022-03-08
11130803	B110D	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-07
11130604	B110E	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130610	B110F	2022-03-01 @ 12:00 pm	2022-03-04 @ 12:00 pm	< 0.3	2022-03-08
11130804	B110H	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130819	B110I	2022-03-01 @ 12:00 pm	2022-03-04 @ 12:00 pm	< 0.3	2022-03-08
11130802	B115	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08

Radon test result report for:
NORTHWOOD HS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11130801	B115A	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130820	B115B	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130830	B115C	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130822	B115D	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130825	B115E	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130840	B135	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130839	B135	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130833	B135A	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130826	B135B	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130834	B135C	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130823	B139	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130832	B139C	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130613	B148	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130614	B148A	2022-03-01 @ 12:00 pm	2022-03-04 @ 12:00 pm	< 0.3	2022-03-08
11130615	B148B	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130878	B207	2022-03-01 @ 2:00 pm	2022-03-04 @ 12:00 pm	< 0.3	2022-03-08
11130634	C100	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.5 ± 0.3	2022-03-08
11130630	C1001	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11130638	C100A	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11130637	C100B	2022-03-01 @ 9:00 am	2022-03-04 @ 1:00 pm	0.5 ± 0.3	2022-03-08
11130628	C100D	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	1.0 ± 0.3	2022-03-08
11130640	C100E	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.6 ± 0.3	2022-03-07
11130639	C100F	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	1.1 ± 0.3	2022-03-08
11130632	C100G	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.8 ± 0.3	2022-03-08
11130631	C100H	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11130647	C100J	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.5 ± 0.3	2022-03-08
11130645	C100J	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11130619	C101	2022-03-01 @ 8:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11130624	C102	2022-03-01 @ 8:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11130620	C103	2022-03-01 @ 8:00 am	2022-03-04 @ 1:00 pm	< 0.3	2022-03-08
11130623	C104	2022-03-01 @ 8:00 am	2022-03-04 @ 12:00 pm	< 0.3	2022-03-07
11130621	C105	2022-03-01 @ 8:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11130622	C106	2022-03-01 @ 8:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11130625	C107	2022-03-01 @ 9:00 am	2022-03-04 @ 1:00 pm	0.8 ± 0.3	2022-03-08
11130646	C110J	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.6 ± 0.3	2022-03-08
11130626	C116	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-07
11130629	C116	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08

Radon test result report for:
NORTHWOOD HS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11130835	CAFE CONFERENCE	2022-03-01 @ 12:00 pm	2022-03-04 @ 12:00 pm	0.9 ± 0.3	2022-03-08
11130824	CAFETERIA	2022-03-01 @ 12:00 pm	2022-03-04 @ 11:00 am	0.7 ± 0.3	2022-03-07
11130817	DANCE STUDIO	2022-03-01 @ 1:00 pm	2022-03-04 @ 11:00 am	2.6 ± 0.4	2022-03-08
11130818	DANCE STUDIO	2022-03-01 @ 1:00 pm	2022-03-04 @ 11:00 am	2.6 ± 0.3	2022-03-08
11130827	E101	2022-03-01 @ 1:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130838	E101A	2022-03-01 @ 1:00 pm	2022-03-04 @ 11:00 am	0.5 ± 0.3	2022-03-07
11130821	E101B	2022-03-01 @ 1:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130845	E101C	2022-03-01 @ 1:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130828	E101D	2022-03-01 @ 1:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130611	E103	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-07
11130837	E104	2022-03-01 @ 1:00 pm	2022-03-04 @ 11:00 am	0.5 ± 0.3	2022-03-08
11130831	E104	2022-03-01 @ 1:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130829	E104	2022-03-01 @ 1:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130607	E106	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	0.6 ± 0.3	2022-03-07
11130606	E107	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-08
11130612	E112	2022-03-01 @ 11:00 am	2022-03-04 @ 12:00 pm	0.6 ± 0.3	2022-03-08
11130608	E115	2022-03-01 @ 11:00 am	2022-03-04 @ 11:00 am	< 0.3	2022-03-07
11130601	E120	2022-03-01 @ 11:00 am	2022-03-04 @ 12:00 pm	< 0.3	2022-03-08
11130859	E201	2022-03-01 @ 2:00 pm	2022-03-04 @ 12:00 pm	< 0.3	2022-03-07
11130603	F107	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-07
11130700	F107	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	0.7 ± 0.3	2022-03-07
11130602	F110	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-08
11130697	F111	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-08
11130696	F112	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-07
11130699	F113	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-07
11130679	F115	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-07
11130686	F115 OFFICE	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-08
11130677	F117	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	0.7 ± 0.3	2022-03-08
11130676	F117A	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	1.2 ± 0.3	2022-03-08
11130684	F117A	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	1.0 ± 0.3	2022-03-08
11130678	F117B	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	0.7 ± 0.3	2022-03-07
11130669	F120	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	0.7 ± 0.3	2022-03-07
11130667	F120	2022-03-01 @ 10:00 am	2022-03-04 @ 12:00 pm	0.5 ± 0.3	2022-03-08
11130650	F122A	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-08
11130671	F122B	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-07
11130670	F122C	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-08
11130687	F124	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-08

Radon test result report for:
NORTHWOOD HS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11130675	F127	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-07
11130691	F128	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-08
11130698	F134	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-08
11130844	G109	2022-03-01 @ 1:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130853	G118	2022-03-01 @ 1:00 pm	2022-03-04 @ 11:00 am	< 0.3	2022-03-08
11130848	G121	2022-03-01 @ 1:00 pm	2022-03-04 @ 12:00 pm	< 0.3	2022-03-08
11130860	G122	2022-03-01 @ 1:00 pm	2022-03-04 @ 12:00 pm	< 0.3	2022-03-08
11130852	G122	2022-03-01 @ 1:00 pm	2022-03-04 @ 12:00 pm	< 0.3	2022-03-08
11130869	G124	2022-03-01 @ 1:00 pm	2022-03-04 @ 12:00 pm	< 0.3	2022-03-07
11130877	GREENHOUSE	2022-03-01 @ 1:00 pm	2022-03-04 @ 12:00 pm	< 0.3	2022-03-08
11130841	MAIN GYM	2022-03-01 @ 1:00 pm	2022-03-04 @ 11:00 am	1.0 ± 0.3	2022-03-08
11130849	MAIN GYM	2022-03-01 @ 1:00 pm	2022-03-04 @ 11:00 am	0.8 ± 0.3	2022-03-08
11130681	MEDIA CENTER	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-07
11130680	MEDIA CENTER	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-08
11130692	W10	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-08
11130693	W11	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-08
11130695	W12	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-08
11130690	W125	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-08
11130685	W15	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-08
11130694	W16	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-08
11130682	W2	2022-03-01 @ 11:00 am	2022-03-04 @ 12:00 pm	< 0.3	2022-03-08
11130689	W3	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-07
11130674	W4	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-07
11130672	W7	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-07
11130673	W7	2022-03-01 @ 11:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-07
11130846	WEIGHT ROOM	2022-03-01 @ 1:00 pm	2022-03-04 @ 11:00 am	1.7 ± 0.3	2022-03-07
11130851	WEIGHT ROOM	2022-03-01 @ 1:00 pm	2022-03-04 @ 11:00 am	1.7 ± 0.3	2022-03-08

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 204620

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

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

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

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

11139367, 11139368, 11139371, _____

11139710, 11139717 _____

E3 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

March 30, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

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

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

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

March 30, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**RSH
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11139726	BASEMENT	2022-03-20 @ 8:00 am	2022-03-23 @ 7:00 am	0.9 ± 0.5	2022-03-30
11139725	DINING	2022-03-20 @ 8:00 am	2022-03-23 @ 7:00 am	< 0.3	2022-03-30

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – March 2022 Schools

Name of Schools:

1. Newport Mill MS
2. Rock View ES
3. Eastern MS
4. Blair, Montgomery HS
5. Montgomery Knolls ES
6. Northwood HS
7. Oakview ES
8. Pine Crest ES
9. Arcola ES
10. Glenallen ES

	Date	Initials
Radon Test Kits Deployed	03/01/2022	PM
Radon Test Kits Collected	03/04/2022	PM
Radon Test Kits Shipped to Lab*	03/04/2022	PM
Radon Test Kits Received by Lab*	03/07/2022	PM

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



MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Northwood High School
Date of Report	3/13/2020
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	1
# Rooms \geq 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	0.8 pCi/L

Project Status

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



3/13/2020

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

Re: Radon Testing Services

KCI Job #12146341.126

Location: Northwood High School

919 University Boulevard West
Silver Spring, Maryland 20901

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 Northwood High School, located at 919 University Boulevard West in Silver Spring, Maryland 20901 (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 #111004 RT) 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 2/18/2020 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.

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

1. Rooms with missing test kits from the December 2019 testing period (i.e. test kit was deployed but not recovered),

-
2. Rooms with invalidated test kits from the December 2019 testing period (e.g. an open window in the room or disturbed test kit),
 3. Rooms which were locked/inaccessible during the December 2019 testing period,
 4. Rooms with elevated December 2019 results (i.e. ≥ 3.5 pCi/L),
 5. Rooms previously tested for radon but not tested in December 2019, and
 6. Additional rooms that require testing (if applicable.)

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 nine (9) 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 2/21/2020 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 were in the mid-20s to the upper-40s; and high temperatures ranged from the lower-40s to the upper-50s. Maximum sustained winds ranged from 9-16 miles per hour. Average humidity was approximately 74%. A total of 1.32 inches of rain were recorded during the testing period. The weather conditions during the testing period may have resulted in atypical radon test results for this facility.

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 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,

Mr. Tyler P. McCleaf
 Radon Measurement Provider
 KCI Technologies, Inc.

Attachments:

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

ATTACHMENT A

Floor Plan With Test Locations

Floor Plan Legend

X-Sample Location (in red)

X- Previous Sample Location

1- Not Samled; No Ground Contact

2- Not Samled; Unoccupied (e.g. Storage, Mechanical)

3- Not Samled; High Humidity/Moisture

4- Not Samled; Bathroom/Hallway

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		
Northwood High School		
Test Period: 02/18/20-02/21/20		
Kit Number	Room / Area	Result
9348511	GYM	0.8
9348532	GYM	< 0.3
9348571	OFFICE BLANK	< 0.3

Table 2- Radon Testing Results			
Northwood High School			
Test Period: 02/18/20-02/21/20			
Kit Number	QC Type	Room / Area	Result
9348506	TRANSIT BLANK	NA	< 0.3

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:

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

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9341725	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.9 \pm 1.6	2020-02-26
9341730	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.1 \pm 1.6	2020-02-26
9341728	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.9 \pm 1.6	2020-02-26
9341726	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	25.8 \pm 1.5	2020-02-26
9341731	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	25.1 \pm 1.5	2020-02-26
9341729	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.2 \pm 1.6	2020-02-26
9341727	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	27.2 \pm 1.6	2020-02-26
9341732	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	27.3 \pm 1.6	2020-02-26

March 5, 2020

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

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

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9341733		2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.4 \pm 1.6	2020-02-26

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

March 5, 2020

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

S

N/A

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9341729	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.2 ± 1.6	2020-02-26
9341727	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	27.2 ± 1.6	2020-02-26
9341732	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	27.3 ± 1.6	2020-02-26
9341725	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.9 ± 1.6	2020-02-26
9341730	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.1 ± 1.6	2020-02-26
9341728	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.9 ± 1.6	2020-02-26
9341726	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	25.8 ± 1.5	2020-02-26
9341731	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	25.1 ± 1.5	2020-02-26

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 194523

NOMINAL Conditions: Radon Conc 25.8 pCi/L Rel. Hum 49.8 % Temp. 70.2 F

Date Start: 2/21/20 Date Stop: 2/24/20 Date Start: _____ Date Stop: _____

Time Start: 0745 Time Stop: 0745 Time Start: _____ Time Stop: _____

Device No.'s: (9) Char Bags - Device No.'s: _____

9341725 thru 9341733

52 ceph

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 2019 Week 3

Name of Schools:

1. Bannockburn E.S.
2. Bradley Hills E.S.
3. East Silver Spring E.S.
4. Einstein H.S.
5. Flora M. Singer E.S.
6. Francis Scott Key M.S.
7. Jones Lane E.S
8. Montgomery Blair H.S.
9. Oak View E.S.
10. Redland M.S.
11. Springbrook H.S.

	Date	Initials
Radon Test Kits Deployed	2/18/20	
Radon Test Kits Collected	2/21/20	
Radon Test Kits Shipped to Lab*	2/21/20	
Radon Test Kits Received by Lab*	2/24/20	

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



MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Northwood High School
Date of Report	2/24/2020
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	136
# Rooms \geq 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	2.2 pCi/L

Project Status

Current Project Status at this time: Testing Complete; missing/compromised tests to be sampled.



2/24/2020

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

Re: Radon Testing Services

KCI Job #12146341126

Location: Northwood High School

919 University Blvd West
Silver Spring, Maryland 20901

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 Northwood High School, located at 919 University Blvd West in Silver Spring, Maryland 20901 (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 Provider (certification #111004 RT) 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 2/3/2020 and deployed one-hundred and fifty-nine (159) 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 sixty (60) 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 2/6/2020 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 National Radon Safety Board (NRSB) radon measurement provider and is a 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 were in the upper-20s and high temperatures were in the mid-50s. Maximum sustained winds ranged from 10-23 miles per hour. Average humidity was around 64%. 0.32 inches of precipitation (rain) 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). 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	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 410-316-7800.

Sincerely,

Mr. Tyler P. McCleaf
Radon Measurement Provider
111004 RT

KCI Technologies, Inc.

Attachments:

A- Floor Plan with Test Locations

B - Tables 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 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		
Northwood High School		
Test Period: 2/3/2020-2/6/2020		
Kit Number	Room / Area	Result
9347104	F115A	< 0.3
9347105	W3	< 0.3
9347106	W1	< 0.3
9347107	W2	< 0.3
9347108	W7	< 0.3
9347109	W10	< 0.3
9347110	W10	< 0.3
9347111	W4	< 0.3
9347112	W6	< 0.3
9347113	W8	< 0.3
9347114	W10	< 0.3
9347115	W9	0.8
9347116	W11	< 0.3
9347117	F134	< 0.3
9347118	E109	< 0.3
9347119	F107	< 0.3
9347120	F113	< 0.3
9347121	F112	< 0.3
9347122	F110	0.8
9347123	F111	< 0.3
9347124	W12	< 0.3
9347125	F134	< 0.3
9347126	F128D	< 0.3
9347127	F128	< 0.3
9347128	F124	< 0.3
9347129	F125A	< 0.3
9347130	F125	< 0.3
9347131	F107A	< 0.3
9347132	E109	< 0.3
9347133	E115	< 0.3
9347134	E103	< 0.3
9347135	E112	< 0.3
9347136	E109	< 0.3
9347137	E112B	< 0.3
9347138	E101D	< 0.3
9347139	E101C	< 0.3
9347140	E104	< 0.3
9347141	E107	< 0.3
9347142	E101D	0.6
9347143	E101B	< 0.3
9347144	E101A	< 0.3
9347145	B148B	0.6

9347146	G118	< 0.3
9347147	G128	< 0.3
9347148	E122	< 0.3
9347149	B148	0.8
9347150	E122	0.7
9347151	G109	< 0.3
9347152	B148A	< 0.3
9347153	D102B	< 0.3
9347154	B105	< 0.3
9347155	E120	< 0.3
9347156	D141	< 0.3
9347157	D150	< 0.3
9347158	B147	< 0.3
9347159	D100	< 0.3
9347160	E122D	0.7
9347161	D141	< 0.3
9347162	D148B	1.5
9347163	B110C	< 0.3
9347164	D146	< 0.3
9347165	B110I	< 0.3
9347166	B110E	< 0.3
9347167	D141	< 0.3
9347168	G125A	< 0.3
9347169	G109A	< 0.3
9347170	B110D	< 0.3
9347171	B110	< 0.3
9347172	B110F	0.6
9347173	B110	< 0.3
9347174	B110	< 0.3
9347175	G124	< 0.3
9347176	G121	< 0.3
9347177	A130	< 0.3
9347178	B139C	< 0.3
9347179	B135C	< 0.3
9347180	B135	0.6
9347181	B135A	< 0.3
9347182	B139	< 0.3
9347183	D147	0.6
9347184	G125A	< 0.3
9347185	D145	< 0.3
9347186	A104	< 0.3
9347187	B115	< 0.3
9347188	A129	< 0.3
9347189	A105	< 0.3
9347190	B135B	< 0.3
9347191	D145	< 0.3
9347192	A111	< 0.3

9347193	B115	< 0.3
9347194	B135B	< 0.3
9347195	B115E	0.8
9347196	B135B	< 0.3
9347197	B115C	< 0.3
9347198	B115D	< 0.3
9347199	B115A	< 0.3
9347200	B115B	< 0.3
9347795	C103	0.6
9347796	C100G	1.1
9347798	C100B	1.1
9347799	C100A	0.9
9347800	C100	1.5
9347801	C101	0.8
9347802	C100J	< 0.3
9347855	C100H	0.6
9347856	C100E	0.9
9347857	C100J	< 0.3
9347858	C100F	1.1
9347861	C105	< 0.3
9347862	C100I	1
9347863	C102	0.6
9347864	C107	1.9
9347865	C104	0.9
9347866	C100D	2.1
9347867	C106	1.5
9347868	C116	< 0.3
9347869	F115	< 0.3
9347870	C108A	1.6
9347871	C108	2.2
9347872	C108	2
9347873	C108A	1.5
9347874	A124	< 0.3
9347875	A121	0.8
9347876	A120	< 0.3
9347877	A114	0.9
9347878	A122	1.4
9347879	C108A	< 0.3
9347880	A123	1
9347881	A126	< 0.3
9347882	A113	< 0.3
9347883	F117A	0.9
9347884	F122	0.9
9347885	F115	< 0.3
9347886	A115	2.1
9347887	A123	0.6
9347888	A116	0.8

9347889	A112	< 0.3
9347890	A125	< 0.3
9347891	F117	< 0.3
9347892	F117B	1.2
9347893	F119	< 0.3
9347894	F120	< 0.3
9347895	F122B	0.9
9347896	F122C	< 0.3
9347897	F122A	< 0.3
9347898	F122A	< 0.3
9347899	F122	1.1
9347900	F122A	< 0.3
9348526	A103	1.2
9348527	A131	< 0.3
9348528	A132	< 0.3
9348529	A131	0.8
9348530	E209	< 0.3
9348533	B209	< 0.3
9348536	C205	< 0.3
9348538	A214	< 0.3
9348543	A224	< 0.3
9348545	A202	< 0.3
9348557	B211	0.8
9341724	OFFICE BLANK	<0.3

Table 2- Radon Testing Results			
Northwood High School			
Test Period: 2/3/2020-2/6/2020			
Kit Number	QC Type	Room / Area	Result
9347802	D	C100J	<0.3
9347873	D	C108A	1.5
9347879	FB	C108A	<0.3
9347880	D	A123	1
9347900	D	F122A	<0.3
9347898	FB	F122A	<0.3
9347885	D	F115	<0.3
9347109	D	W10	<0.3
9347110	FB	W10	<0.3
9347117	D	F134	<0.3
9347132	D	E109	<0.3
9347136	FB	E109	<0.3
9347138	D	E101D	<0.3
9347161	D	D141	<0.3
9347156	FB	D141	<0.3
9347184	D	G125A	<0.3
9347174	D	B110	<0.3
9347173	FB	B110	<0.3
9347187	D	B115	<0.3
9347196	D	B135B	<0.3
9347190	FB	B135B	<0.3
9348527	D	A131	<0.3
9334902	TRANSIT BLANK	NA	<0.3

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:

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

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340067	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 \pm 2.4 D	2020-01-03
9340035	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	22.5 \pm 2.3 D	2020-01-03
9340003	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.2 \pm 2.4 D	2020-01-03
9340089	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	23.3 \pm 2.3 D	2020-01-03
9340072	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	18.3 \pm 2.0 D	2020-01-03
9340040	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.3 \pm 2.6 D	2020-01-03
9340008	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.8 \pm 2.5 D	2020-01-03
9340094	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.7 \pm 2.5 D	2020-01-03
9340099	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	27.5 \pm 2.6 D	2020-01-03
9340077	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.2 \pm 2.5 D	2020-01-03
9340045	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.7 \pm 2.4 D	2020-01-03
9340013	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.9 \pm 2.6 D	2020-01-03
9340018	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	29.1 \pm 2.8 D	2020-01-03
9341704	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 \pm 2.4 D	2020-01-03
9340050	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.2 \pm 2.6 D	2020-01-03
9340023	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.2 \pm 2.7 D	2020-01-03
9341709	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.5 \pm 2.4 D	2020-01-03
9340055	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.8 \pm 2.6 D	2020-01-03
9340060	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.3 \pm 2.5 D	2020-01-03
9340028	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	23.9 \pm 2.3 D	2020-01-03
9341714	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	28.3 \pm 2.7 D	2020-01-03
9340082	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.4 \pm 2.6 D	2020-01-03
9340065	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.2 \pm 2.4 D	2020-01-03
9340033	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.2 \pm 2.5 D	2020-01-03
9341719	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.7 \pm 2.5 D	2020-01-03
9340001	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.3 \pm 2.5 D	2020-01-03
9340087	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.8 \pm 2.4 D	2020-01-03
9340070	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	19.5 \pm 2.4 D	2020-01-03
9340038	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.7 \pm 2.3 D	2020-01-03
9340006	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.2 \pm 2.4 D	2020-01-03
9340092	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	31.4 \pm 2.8 D	2020-01-03
9340097	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.7 \pm 2.5 D	2020-01-03
9340075	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	29.6 \pm 2.6 D	2020-01-03
9340043	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.1 \pm 2.6 D	2020-01-03
9340011	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.8 \pm 2.5 D	2020-01-03
9340016	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	23.2 \pm 2.4 D	2020-01-03
9341702	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.8 \pm 2.5 D	2020-01-03

Radon test result report for:**S****N/A**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340048	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.5 ± 2.4 D	2020-01-03
9340021	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.7 ± 2.6 D	2020-01-03
9341707	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.8 ± 2.4 D	2020-01-03
9340053	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.8 ± 2.5 D	2020-01-03
9340058	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.5 ± 2.7 D	2020-01-03
9340026	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.9 ± 2.4 D	2020-01-03
9341712	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.3 ± 2.4 D	2020-01-03
9340080	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 ± 2.4 D	2020-01-03
9340063	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.8 ± 2.5 D	2020-01-03
9340031	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.9 ± 2.4 D	2020-01-03
9341717	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.7 ± 2.4 D	2020-01-03
9340085	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.9 ± 2.5 D	2020-01-03
9340068	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.2 ± 2.5 D	2020-01-03
9340036	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	23.6 ± 2.3 D	2020-01-03
9340004	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.9 ± 2.6 D	2020-01-03
9340090	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.3 ± 2.5 D	2020-01-03
9340073	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.8 ± 2.5 D	2020-01-03
9340041	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.6 ± 2.4 D	2020-01-03
9340009	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.1 ± 2.4 D	2020-01-03
9340095	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.2 ± 2.5 D	2020-01-03
9340100	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.5 ± 2.4 D	2020-01-03
9340078	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.0 ± 2.4 D	2020-01-03
9340046	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.0 ± 2.6 D	2020-01-03
9340014	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	21.8 ± 2.8 D	2020-01-03
9340019	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.0 ± 2.5 D	2020-01-03
9341705	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	27.8 ± 2.6 D	2020-01-03
9340051	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.5 ± 2.4 D	2020-01-03
9340056	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.7 ± 2.6 D	2020-01-03
9340024	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.3 ± 2.5 D	2020-01-03
9341710	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.2 ± 2.3 D	2020-01-03
9340061	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	28.9 ± 2.6 D	2020-01-03
9340029	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	23.0 ± 2.3 D	2020-01-03
9341715	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	27.0 ± 2.5 D	2020-01-03
9340083	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.9 ± 2.4 D	2020-01-03
9340066	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 ± 2.4 D	2020-01-03
9340034	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.4 ± 2.5 D	2020-01-03
9341720	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.3 ± 2.5 D	2020-01-03

Radon test result report for:**S****N/A**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340002	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.7 ± 2.5 D	2020-01-03
9340088	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.4 ± 2.5 D	2020-01-03
9340071	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.9 ± 2.4 D	2020-01-03
9340039	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.9 ± 2.5 D	2020-01-03
9340007	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.9 ± 2.4 D	2020-01-03
9340093	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 ± 2.5 D	2020-01-03
9340098	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.8 ± 2.5 D	2020-01-03
9340076	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 ± 2.5 D	2020-01-03
9340044	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.2 ± 2.5 D	2020-01-03
9340012	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	22.5 ± 2.2 D	2020-01-03
9340017	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.3 ± 2.5 D	2020-01-03
9341703	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.0 ± 2.5 D	2020-01-03
9340049	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.0 ± 2.5 D	2020-01-03
9340022	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.6 ± 2.6 D	2020-01-03
9341708	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	28.8 ± 2.8 D	2020-01-03
9340054	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.8 ± 2.5 D	2020-01-03
9340059	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.5 ± 2.6 D	2020-01-03
9340027	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.6 ± 2.5 D	2020-01-03
9341713	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.5 ± 2.5 D	2020-01-03
9340081	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	18.4 ± 2.1 D	2020-01-03
9340064	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.5 ± 2.5 D	2020-01-03
9340032	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.1 ± 2.4 D	2020-01-03
9341718	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	23.7 ± 2.4 D	2020-01-03
9340086	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.9 ± 2.6 D	2020-01-03
9340069	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.6 ± 2.5 D	2020-01-03
9340037	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.4 ± 2.6 D	2020-01-03
9340005	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	???? DIF1	2020-01-03
9340091	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.5 ± 2.5 D	2020-01-03
9340096	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.2 ± 2.5 D	2020-01-03
9340074	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	27.7 ± 2.5 D	2020-01-03
9340042	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.6 ± 2.5 D	2020-01-03
9340010	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.5 ± 2.5 D	2020-01-03
9341701	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	22.9 ± 2.3 D	2020-01-03
9340047	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.7 ± 2.5 D	2020-01-03
9340015	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.4 ± 2.5 D	2020-01-03
9340020	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.1 ± 2.4 D	2020-01-03
9341706	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	31.0 ± 2.7 D	2020-01-03

January 3, 2020

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

S

N/A

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340052	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.4 ± 2.6 D	2020-01-03
9340057	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.3 ± 2.5 D	2020-01-03
9340025	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.1 ± 2.4 D	2020-01-03
9341711	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	22.5 ± 2.2 D	2020-01-03
9340079	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.9 ± 2.5 D	2020-01-03
9340062	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.6 ± 2.5 D	2020-01-03
9340030	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.0 ± 2.4 D	2020-01-03
9341716	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 ± 2.4 D	2020-01-03
9340084	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.5 ± 2.3 D	2020-01-03

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc Job Number 193598

NOMINAL Conditions: Radon Conc _____ pCi/L Rel. Hum _____ % Temp. _____ F

Date Start: 12/21/19 Date Stop: 12/23/19

Time Start: 0830 Time Stop: 0830

(Group 4)
Device No.'s: (20) Char. Bags -

9340061 thru 9340080

Temp of _____
RH % _____
Avg pCi/L _____

52

Date Start: 12/21/19 Date Stop: 12/23/19

Time Start: 0835 Time Stop: 0835

(Group 5)
Device No.'s: (20) Char. Bags -

9340081 thru 9340100

Temp of _____
RH % _____
Avg pCi/L _____

25

Date Start: 12/21/19 Date Stop: 12/23/19

Time Start: 0840 Time Stop: 0840

(Group 6)
Device No.'s: (20) Char. Bags -

9341701 thru 9341720

Temp of _____
RH % _____
Avg pCi/L _____

25

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

Radon test result report for:
NORTHWOOD
796

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9348526	A103	2020-02-03 @ 3:00 pm	2020-02-06 @ 11:00 am	1.2 ± 0.4	2020-02-11
9347186	A104	2020-02-03 @ 3:00 pm	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347189	A105	2020-02-03 @ 3:00 pm	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347192	A111	2020-02-03 @ 3:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347889	A112	2020-02-03 @ 9:00 am	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347882	A113	2020-02-03 @ 9:00 am	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347877	A114	2020-02-03 @ 9:00 am	2020-02-06 @ 11:00 am	0.9 ± 0.4	2020-02-11
9347886	A115	2020-02-03 @ 10:00 am	2020-02-06 @ 11:00 am	2.1 ± 0.5	2020-02-11
9347888	A116	2020-02-03 @ 10:00 am	2020-02-06 @ 11:00 am	0.8 ± 0.4	2020-02-11
9347876	A120	2020-02-03 @ 10:00 am	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347875	A121	2020-02-03 @ 10:00 am	2020-02-06 @ 11:00 am	0.8 ± 0.4	2020-02-11
9347878	A122	2020-02-03 @ 9:00 am	2020-02-06 @ 11:00 am	1.4 ± 0.4	2020-02-11
9347887	A123	2020-02-03 @ 9:00 am	2020-02-06 @ 11:00 am	0.6 ± 0.3	2020-02-11
9347880	A123	2020-02-03 @ 9:00 am	2020-02-06 @ 11:00 am	1.0 ± 0.4	2020-02-11
9347874	A124	2020-02-03 @ 9:00 am	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347890	A125	2020-02-03 @ 9:00 am	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347881	A126	2020-02-03 @ 9:00 am	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347188	A129	2020-02-03 @ 3:00 pm	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347177	A130	2020-02-03 @ 3:00 pm	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9348529	A131	2020-02-03 @ 3:00 pm	2020-02-06 @ 11:00 am	0.8 ± 0.4	2020-02-11
9348527	A131	2020-02-03 @ 3:00 pm	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9348528	A132	2020-02-03 @ 3:00 pm	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9348545	A202	2020-02-03 @ 3:00 pm	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9348538	A214	2020-02-03 @ 3:00 pm	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9348543	A224	2020-02-03 @ 3:00 pm	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347154	B105	2020-02-03 @ 2:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347171	B110	2020-02-03 @ 2:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347174	B110	2020-02-03 @ 2:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347173	B110	2020-02-03 @ 2:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347163	B110C	2020-02-03 @ 2:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347170	B110D	2020-02-03 @ 2:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347166	B110E	2020-02-03 @ 2:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347172	B110F	2020-02-03 @ 2:00 pm	2020-02-06 @ 9:00 am	0.6 ± 0.4	2020-02-11
9347165	B110I	2020-02-03 @ 2:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347193	B115	2020-02-03 @ 2:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347187	B115	2020-02-03 @ 3:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347199	B115A	2020-02-03 @ 2:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11

Radon test result report for:**NORTHWOOD****796**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9347200	B115B	2020-02-03 @ 2:00 pm	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347197	B115C	2020-02-03 @ 3:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347198	B115D	2020-02-03 @ 3:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347195	B115E	2020-02-03 @ 3:00 pm	2020-02-06 @ 9:00 am	0.8 ± 0.4	2020-02-11
9347180	B135	2020-02-03 @ 3:00 pm	2020-02-06 @ 9:00 am	0.6 ± 0.4	2020-02-11
9347181	B135A	2020-02-03 @ 3:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347196	B135B	2020-02-03 @ 3:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347194	B135B	2020-02-03 @ 3:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347190	B135B	2020-02-03 @ 3:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347179	B135C	2020-02-03 @ 3:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347182	B139	2020-02-03 @ 3:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347178	B139C	2020-02-03 @ 3:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347158	B147	2020-02-03 @ 3:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347149	B148	2020-02-03 @ 2:00 pm	2020-02-06 @ 9:00 am	0.8 ± 0.4	2020-02-11
9347152	B148A	2020-02-03 @ 2:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347145	B148B	2020-02-03 @ 2:00 pm	2020-02-06 @ 9:00 am	0.6 ± 0.4	2020-02-11
9348533	B209	2020-02-03 @ 3:00 pm	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9348557	B211	2020-02-03 @ 3:00 pm	2020-02-06 @ 11:00 am	0.8 ± 0.4	2020-02-11
9347800	C100	2020-02-03 @ 8:00 am	2020-02-06 @ 8:00 am	1.5 ± 0.5	2020-02-11
9347799	C100A	2020-02-03 @ 8:00 am	2020-02-06 @ 8:00 am	0.9 ± 0.5	2020-02-11
9347798	C100B	2020-02-03 @ 8:00 am	2020-02-06 @ 8:00 am	1.1 ± 0.4	2020-02-11
9347866	C100D	2020-02-03 @ 8:00 am	2020-02-06 @ 8:00 am	2.1 ± 0.5	2020-02-11
9347856	C100E	2020-02-03 @ 8:00 am	2020-02-06 @ 8:00 am	0.9 ± 0.4	2020-02-11
9347858	C100F	2020-02-03 @ 8:00 am	2020-02-06 @ 8:00 am	1.1 ± 0.4	2020-02-11
9347796	C100G	2020-02-03 @ 8:00 am	2020-02-06 @ 8:00 am	1.1 ± 0.4	2020-02-11
9347855	C100H	2020-02-03 @ 8:00 am	2020-02-06 @ 8:00 am	0.6 ± 0.4	2020-02-11
9347862	C100I	2020-02-03 @ 8:00 am	2020-02-06 @ 8:00 am	1.0 ± 0.4	2020-02-11
9347802	C100J	2020-02-03 @ 9:00 am	2020-02-06 @ 8:00 am	< 0.3	2020-02-11
9347857	C100J	2020-02-03 @ 8:00 am	2020-02-06 @ 8:00 am	< 0.3	2020-02-11
9347801	C101	2020-02-03 @ 9:00 am	2020-02-06 @ 9:00 am	0.8 ± 0.4	2020-02-11
9347863	C102	2020-02-03 @ 9:00 am	2020-02-06 @ 9:00 am	0.6 ± 0.4	2020-02-11
9347795	C103	2020-02-03 @ 9:00 am	2020-02-06 @ 9:00 am	0.6 ± 0.4	2020-02-11
9347865	C104	2020-02-03 @ 9:00 am	2020-02-06 @ 9:00 am	0.9 ± 0.4	2020-02-11
9347861	C105	2020-02-03 @ 9:00 am	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347867	C106	2020-02-03 @ 9:00 am	2020-02-06 @ 9:00 am	1.5 ± 0.4	2020-02-11
9347864	C107	2020-02-03 @ 9:00 am	2020-02-06 @ 9:00 am	1.9 ± 0.5	2020-02-11
9347872	C108	2020-02-03 @ 9:00 am	2020-02-06 @ 9:00 am	2.0 ± 0.4	2020-02-11

Radon test result report for:
NORTHWOOD
796

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9347871	C108	2020-02-03 @ 9:00 am	2020-02-06 @ 9:00 am	2.2 ± 0.4	2020-02-11
9347879	C108A	2020-02-03 @ 9:00 am	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347870	C108A	2020-02-03 @ 9:00 am	2020-02-06 @ 9:00 am	1.6 ± 0.5	2020-02-11
9347873	C108A	2020-02-03 @ 9:00 am	2020-02-06 @ 9:00 am	1.5 ± 0.5	2020-02-11
9347868	C116	2020-02-03 @ 9:00 am	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9348536	C205	2020-02-03 @ 3:00 pm	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347159	D100	2020-02-03 @ 2:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347153	D102B	2020-02-03 @ 2:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347167	D141	2020-02-03 @ 1:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347156	D141	2020-02-03 @ 1:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347161	D141	2020-02-03 @ 1:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347191	D145	2020-02-03 @ 12:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347185	D145	2020-02-03 @ 12:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347164	D146	2020-02-03 @ 1:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347183	D147	2020-02-03 @ 12:00 pm	2020-02-06 @ 10:00 am	0.6 ± 0.4	2020-02-11
9347162	D148B	2020-02-03 @ 1:00 pm	2020-02-06 @ 10:00 am	1.5 ± 0.5	2020-02-11
9347157	D150	2020-02-03 @ 1:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347144	E101A	2020-02-03 @ 12:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347143	E101B	2020-02-03 @ 12:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347139	E101C	2020-02-03 @ 12:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347142	E101D	2020-02-03 @ 12:00 pm	2020-02-06 @ 10:00 am	0.6 ± 0.4	2020-02-11
9347138	E101D	2020-02-03 @ 12:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347134	E103	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347140	E104	2020-02-03 @ 12:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347141	E107	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347132	E109	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347118	E109	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347136	E109	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347135	E112	2020-02-03 @ 12:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347137	E112B	2020-02-03 @ 12:00 pm	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347133	E115	2020-02-03 @ 12:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347155	E120	2020-02-03 @ 1:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347150	E122	2020-02-03 @ 1:00 pm	2020-02-06 @ 9:00 am	0.7 ± 0.4	2020-02-11
9347148	E122	2020-02-03 @ 1:00 pm	2020-02-06 @ 9:00 am	< 0.3	2020-02-11
9347160	E122D	2020-02-03 @ 1:00 pm	2020-02-06 @ 9:00 am	0.7 ± 0.4	2020-02-11
9348530	E209	2020-02-03 @ 3:00 pm	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347119	F107	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11

Radon test result report for:
NORTHWOOD
796

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9347131	F107A	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347122	F110	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	0.8 ± 0.4	2020-02-11
9347123	F111	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347121	F112	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347120	F113	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347869	F115	2020-02-03 @ 10:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347885	F115	2020-02-03 @ 10:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347104	F115A	2020-02-03 @ 10:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347891	F117	2020-02-03 @ 10:00 am	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347883	F117A	2020-02-03 @ 10:00 am	2020-02-06 @ 11:00 am	0.9 ± 0.4	2020-02-11
9347892	F117B	2020-02-03 @ 10:00 am	2020-02-06 @ 11:00 am	1.2 ± 0.4	2020-02-11
9347893	F119	2020-02-03 @ 10:00 am	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347894	F120	2020-02-03 @ 10:00 am	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347884	F122	2020-02-03 @ 10:00 am	2020-02-06 @ 11:00 am	0.9 ± 0.4	2020-02-11
9347899	F122	2020-02-03 @ 10:00 am	2020-02-06 @ 11:00 am	1.1 ± 0.4	2020-02-11
9347897	F122A	2020-02-03 @ 10:00 am	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347900	F122A	2020-02-03 @ 10:00 am	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347898	F122A	2020-02-03 @ 10:00 am	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347895	F122B	2020-02-03 @ 10:00 am	2020-02-06 @ 11:00 am	0.9 ± 0.4	2020-02-11
9347896	F122C	2020-02-03 @ 10:00 am	2020-02-06 @ 11:00 am	< 0.3	2020-02-11
9347128	F124	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347130	F125	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347129	F125A	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347127	F128	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347126	F128D	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347117	F134	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347125	F134	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347151	G109	2020-02-03 @ 1:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347169	G109A	2020-02-03 @ 1:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347146	G118	2020-02-03 @ 1:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347176	G121	2020-02-03 @ 2:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347175	G124	2020-02-03 @ 2:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347184	G125A	2020-02-03 @ 2:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347168	G125A	2020-02-03 @ 2:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347147	G128	2020-02-03 @ 2:00 pm	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347106	W1	2020-02-03 @ 10:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347110	W10	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11

February 11, 2020

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

NORTHWOOD

796

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9347109	W10	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347114	W10	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347116	W11	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347124	W12	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347107	W2	2020-02-03 @ 10:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347105	W3	2020-02-03 @ 10:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347111	W4	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347112	W6	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347108	W7	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347113	W8	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	< 0.3	2020-02-11
9347115	W9	2020-02-03 @ 11:00 am	2020-02-06 @ 10:00 am	0.8 ± 0.4	2020-02-11

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 2019

Name of Schools:

1. Northwood H.S.

	Date	Initials
Radon Test Kits Deployed	2/3/20	SM
Radon Test Kits Collected	2/6/20	SM
Radon Test Kits Shipped to Lab*	2/7/20	SM
Radon Test Kits Received by Lab*	2/10/202	SM

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



MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Northwood High School
Date of Report	March 12, 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	30
# Rooms \geq 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	2.2 pCi/L

Project Status

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



March 12, 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: Northwood High School

919 University Blvd.
Silver Spring, Maryland 20901

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 Northwood High School, located at 919 University Blvd. in Silver Spring, Maryland 20901 (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 13, 2018 and deployed thirty-six (36) 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 16, 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 post-mitigation biennial testing.

These tests were conducted to:

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

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

KCI recorded observations of the following conditions in each room 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 10-18 miles per hour. Average humidity was around 73%. 0.30 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 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		
Northwood High School		
Test Period: 02/13/18-02/16/18		
Kit Number	Room / Area	Result
7985674	A111	< 0.3
7985691	A114	2.2
7975991	A223	< 0.3
7985682	* AUX GYM (Missing)	-
7985694	* AUX GYM (Tampered)	< 0.3
7986628	B102	0.7
7985671	B105	0.7
7985695	B110 I	< 0.3
7194156	B115	< 0.3
7194158	B115 D	0.7
7985679	C104	0.8
7194194	C106	< 0.3
7985663	C116	0.8
7985673	C122	0.9
7985677	D147	1.6
7985681	E104	< 0.3
7985688	E112AQ	< 0.3
7985693	E115	< 0.3
7985689	E120	1.1
7985675	F107 A	0.6
7986625	F115 A	< 0.3
7986623	F125	0.7
7985690	* F128 (Missing)	-
7985676	G108A	< 0.3
7986607	* G108B (Tampered)	< 0.3
7985670	G118	< 0.3
7986624	G118 B	< 0.3
7985697	G128	< 0.3
7985687	KIT OFF	1.6
7985672	* KITCHEN (Missing)	-
7986622	* W7 (Tampered)	0.7

Table Note:

* Missing or Compromised Sample

Table 2 - Radon Testing Results		
Northwood High School		
Test Period: 02/13/18-02/16/18		
Kit Number	QC Type	Result
7985678	D (A223)	0.8
7985685	D (C106)	0.7
7985653	D (F115 A)	0.5
7985696	D (G118A)	0.9
7985692	FB (C106)	0.6

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:
NORTHWOOD HIGH SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7985674	A111	2018-02-13 @ 11:00 am	2018-02-16 @ 11:00 am	< 0.3	2018-02-20
7985691	A114	2018-02-13 @ 11:00 am	2018-02-16 @ 11:00 am	2.2 ± 0.4	2018-02-20
7975991	A223	2018-02-13 @ 1:00 pm	2018-02-16 @ 11:00 am	< 0.3	2018-02-20
7985678	A223	2018-02-13 @ 1:00 pm	2018-02-16 @ 11:00 am	0.8 ± 0.3	2018-02-20
7985682	AUX GYM	@	@		
7985694	AUX GYM	2018-02-13 @ 12:00 pm	2018-02-16 @ 11:00 am	< 0.3	2018-02-20
7986628	B102	2018-02-13 @ 12:00 pm	2018-02-16 @ 11:00 am	0.7 ± 0.3	2018-02-20
7985671	B105	2018-02-13 @ 11:00 am	2018-02-16 @ 11:00 am	0.7 ± 0.3	2018-02-20
7985695	B110 I	2018-02-13 @ 11:00 am	2018-02-16 @ 11:00 am	< 0.3	2018-02-20
7194156	B115	2018-02-13 @ 11:00 am	2018-02-16 @ 11:00 am	< 0.3	2018-02-20
7194158	B115 D	2018-02-13 @ 11:00 am	2018-02-16 @ 11:00 am	0.7 ± 0.3	2018-02-20
7985679	C104	2018-02-13 @ 1:00 pm	2018-02-16 @ 11:00 am	0.8 ± 0.3	2018-02-20
7194194	C106	2018-02-13 @ 1:00 pm	2018-02-16 @ 12:00 pm	< 0.3	2018-02-20
7985685	C106	2018-02-13 @ 12:00 pm	2018-02-16 @ 12:00 pm	0.7 ± 0.3	2018-02-20
7985692	C106	2018-02-13 @ 12:00 pm	2018-02-16 @ 12:00 pm	0.6 ± 0.3	2018-02-20
7985663	C116	2018-02-13 @ 1:00 pm	2018-02-16 @ 11:00 am	0.8 ± 0.3	2018-02-20
7985673	C122	2018-02-13 @ 1:00 pm	2018-02-16 @ 11:00 am	0.9 ± 0.3	2018-02-20
7985677	D147	2018-02-13 @ 12:00 pm	2018-02-16 @ 11:00 am	1.6 ± 0.3	2018-02-20
7985681	E104	2018-02-13 @ 12:00 pm	2018-02-16 @ 11:00 am	< 0.3	2018-02-20
7985688	E112AQ	2018-02-13 @ 12:00 pm	2018-02-16 @ 11:00 am	< 0.3	2018-02-20
7985693	E115	2018-02-13 @ 12:00 pm	2018-02-16 @ 11:00 am	< 0.3	2018-02-20
7985689	E120	2018-02-13 @ 11:00 am	2018-02-16 @ 11:00 am	1.1 ± 0.3	2018-02-20
7985675	F107 A	2018-02-13 @ 12:00 pm	2018-02-16 @ 11:00 am	0.6 ± 0.3	2018-02-20
7985653	F115 A	2018-02-13 @ 11:00 am	2018-02-16 @ 11:00 am	0.5 ± 0.3	2018-02-20
7986625	F115 A	2018-02-13 @ 11:00 am	2018-02-16 @ 11:00 am	< 0.3	2018-02-20
7986623	F125	2018-02-13 @ 11:00 am	2018-02-16 @ 11:00 am	0.7 ± 0.3	2018-02-20
7985690	F128	@	@		
7985676	G108A	2018-02-13 @ 12:00 pm	2018-02-16 @ 11:00 am	< 0.3	2018-02-20
7986607	G108B	2018-02-13 @ 12:00 pm	2018-02-16 @ 11:00 am	< 0.3	2018-02-20
7985670	G118	2018-02-13 @ 12:00 pm	2018-02-16 @ 11:00 am	< 0.3	2018-02-20
7986624	G118 B	2018-02-13 @ 12:00 pm	2018-02-16 @ 11:00 am	< 0.3	2018-02-20
7985696	G118A	2018-02-13 @ 12:00 pm	2018-02-16 @ 11:00 am	0.9 ± 0.3	2018-02-20
7985697	G128	2018-02-13 @ 12:00 pm	2018-02-16 @ 11:00 am	< 0.3	2018-02-20
7985687	KIT OFF	2018-02-13 @ 11:00 am	2018-02-16 @ 11:00 am	1.6 ± 0.3	2018-02-20
7985672	KITCHEN	@	@		
7986622	W7	2018-02-13 @ 11:00 am	2018-02-16 @ 11:00 am	0.7 ± 0.3	2018-02-20



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase

Names of Schools:

- | | |
|---------------------------------------|--|
| 1. Westbrook Elementary School | 21. E. Silver Spring Elementary School |
| 2. Westland Middle School | 22. Silver Spring Int. Middle School |
| 3. Walt Whitman High School | 23. Clarksburg High School |
| 4. Cloverly Elementary School | 24. Rosa Parks Middle School |
| 5. Sligo Middle School | 25. Greenwood Elementary School |
| 6. Flora Singer Elementary School | 26. Montgomery Knolls Elem. School |
| 7. Albert Einstein High School | 27. Watkins Mill Elementary School |
| 8. Roscoe Nix Elementary School | 28. Gaithersburg Elementary School |
| 9. Mario Loiederman Middle School | 29. Viers Mill Elementary School |
| 10. Sargent Shriver Elementary School | 30. Rock View Elementary School |
| 11. Whetstone Elementary School | |
| 12. Brooke Grove Elementary School | |
| 13. Clearspring Elementary School | |
| 14. Beall Elementary School | |
| 15. Maryvale Elementary School | |
| 16. Lathrop E. Smith Center | |
| 17. Laytonsville Elementary School | |
| 18. Germantown Elementary School | |
| 19. Spring Mill Center | |
| 20. Northwood High School | |

	Date	Initials
Radon Test Kits Deployed	2/13/18	JM
Radon Test Kits Collected	2/16/18	JM
Radon Test Kits Shipped to Lab*	2/16/18	JM
Radon Test Kits Received by Lab*	2/20/18	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 μ R/h Elevation = 820 ft



MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Northwood High School
Date of Report	January 30, 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	123
# Rooms ≥ 4.0 pCi/L	0
Lowest Value	< 0.3 pCi/L
Highest Value	1.8 pCi/L

Current Project Status at this time: Results satisfactory to date; missed locations and missing/compromised tests to be sampled.



January 30, 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: Northwood High School

919 University Blvd.
Silver Spring, Maryland 20901

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 Northwood High School, located at 919 University Blvd. in Silver Spring, Maryland 20901 (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 one-hundred and fifty-seven (157) 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:

- Post-mitigation biennial testing.

These tests were conducted to:

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

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

KCI recorded observations of the following conditions in each room 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 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,



James Mouldsdales, 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		
Northwood High School		
Test Period: 11/27/17-11/30/17		
Kit Number	Room / Area	Result
7976773	A103	0.8
7976776	A104	< 0.3
7976768	A105	< 0.3
7976780	A113	< 0.3
7976785	* A114 (Missing)	-
7976781	A115	1.1
7976788	A116	< 0.3
7976787	A120	0.5
7976791	A121	0.6
7976786	A122	1.2
7976784	A123	0.7
7976783	A125	< 0.3
7976779	A126	< 0.3
7976767	A128	< 0.3
7976771	A129	< 0.3
7976772	A130	< 0.3
7976774	A131	< 0.3
7976778	A132	0.8
7977093	A202	< 0.3
7977086	A203	< 0.3
7977075	A204	< 0.3
7977100	A211	< 0.3
7977096	A212	< 0.3
7977095	* A223 (Missing)	-
7977089	A224	< 0.3
7977088	A225	< 0.3
7977079	A226	< 0.3
7977070	A227	< 0.3
7977078	A228	< 0.3
7977087	A229	< 0.3
7977092	A230	< 0.3
7977064	B110	< 0.3
7977071	B110C	< 0.3
7977074	B110D	< 0.3
7977067	B110E	< 0.3
7977066	B110F	< 0.3
7977069	B110H	< 0.3
7977077	* B115 (Missing)	-
7977072	B115A	< 0.3
7977082	B115B	< 0.3
7977081	B115C	< 0.3
7977080	* B115D (Missing)	-
7977073	B115E	< 0.3
7977076	B135	< 0.3
7977094	B135A	< 0.3
7977090	B135B	< 0.3

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Northwood High School		
Test Period: 11/27/17-11/30/17		
Kit Number	Room / Area	Result
7977098	B135C	< 0.3
7977084	B139	< 0.3
7977091	B139A	< 0.3
7977068	B147	< 0.3
7977058	B148	< 0.3
7977062	B148A	< 0.3
7977063	B148B	< 0.3
7976751	C 100 E	< 0.3
7976753	C 100 F	1.2
7976758	C 100 G	< 0.3
7976749	C 100 H	< 0.3
7976745	C100	< 0.3
7976746	C100	0.5
7976752	C100 A	0.5
7976747	C100 B	< 0.3
7976748	C100 D	1.1
7976750	C100J	< 0.3
7976756	C101	0.6
7976757	C102	< 0.3
7976764	C103	< 0.3
7976763	C105	< 0.3
7976754	C106	< 0.3
7976759	C107	0.8
7976760	C108	1.4
7976765	C108	0.8
7976766	C108	0.8
7976761	C116	0.7
7977049	D100	< 0.3
7977050	D102B	< 0.3
7977046	D145	0.9
7977047	D145	< 0.3
7977048	D148B	1.8
7977038	DNC	1.5
7977039	E101A	< 0.3
7977040	E101B	< 0.3
7977032	E101C	< 0.3
7977036	E101D	< 0.3
7977035	E103	< 0.3
7977033	E107	< 0.3
7977034	E109	< 0.3
7977037	E112	< 0.3
7977052	E122	< 0.3
7977056	E122	< 0.3
7977057	E122	< 0.3
7977027	F107	0.5
7977030	F110	< 0.3
7977023	F111	< 0.3
7977028	F111	< 0.3
7977026	F112	< 0.3
7977024	F113	< 0.3

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Northwood High School		
Test Period: 11/27/17-11/30/17		
Kit Number	Room / Area	Result
7977004	F115	< 0.3
7976800	F117	0.8
7976799	F117A	0.5
7976798	F119	0.6
7976797	F120	< 0.3
7976782	F122	< 0.3
7976789	F122	< 0.3
7976792	F122	< 0.3
7976795	F122 B	1.7
7976794	F122A	0.6
7976796	F122C	< 0.3
7977003	F124	< 0.3
7977013	F128D	< 0.3
7977022	* F128 (Missing)	-
7977021	F128 office	< 0.3
7977018	F134	0.5
7977019	F134	0.6
7977044	G109	< 0.3
7977045	G109A	< 0.3
7977051	G118	0.5
7977053	G121	< 0.3
7977054	G124	< 0.3
7977061	G125	< 0.3
7977055	* G128 (Missing)	-
7977014	W1	< 0.3
7977002	W10	0.6
7977008	W12	< 0.3
7977015	W125	< 0.3
7977017	W127	< 0.3
7977011	W15	< 0.3
7977012	W16	< 0.3
7977005	W2	< 0.3
7977009	W3	< 0.3
7977001	W4	< 0.3
7977010	W6	< 0.3
7977007	W8	< 0.3

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Northwood High School		
Test Period: 11/27/17-11/30/17		
Kit Number	QC Type	Result
7976777	D (A103)	0.6
7976775	D (A115)	1.5
7977085	D (A211)	< 0.3
7977083	D (B115C)	< 0.3
7977097	D (B135B)	< 0.3
7977065	D (B148)	< 0.3
7976755	D (C100 J)	< 0.3
7976762	* D (C105:Missing)	-
7976770	D (C108)	1.2
7977042	D (D145)	0.7
7977043	D (D148B)	1.8
7977029	D (E101C)	< 0.3
7977031	D (F107)	< 0.3
7976793	D (F122B)	1.4
7977059	D (G124)	< 0.3
7977020	D (W125)	< 0.3
7977006	D (W4)	< 0.3
7977099	FB (A211)	< 0.3
7976769	FB (C108)	< 0.3
7977041	* FB (D145:Missing)	-
7977025	FB (E101C)	< 0.3
7977060	FB (G124)	< 0.3
7977016	FB (W125)	< 0.3
7977989	OB (OB)	< 0.3
7977999	OB (OB)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:
NORTHWOOD HS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7976777	A103	2017-11-27 @ 4:00 pm	2017-11-30 @ 11:00 am	0.6 ± 0.3	2017-12-04
7976773	A103	2017-11-27 @ 4:00 pm	2017-11-30 @ 11:00 am	0.8 ± 0.3	2017-12-04
7976776	A104	2017-11-27 @ 4:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7976768	A105	2017-11-27 @ 4:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7976781	A115	2017-11-27 @ 4:00 pm	2017-11-30 @ 11:00 am	1.1 ± 0.3	2017-12-04
7976788	A116	2017-11-27 @ 4:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7976787	A120	2017-11-27 @ 4:00 pm	2017-11-30 @ 11:00 am	0.5 ± 0.2	2017-12-04
7976791	A121	2017-11-27 @ 4:00 pm	2017-11-30 @ 11:00 am	0.6 ± 0.3	2017-12-04
7976786	A122	2017-11-27 @ 4:00 pm	2017-11-30 @ 11:00 am	1.2 ± 0.3	2017-12-04
7976784	A123	2017-11-27 @ 4:00 pm	2017-11-30 @ 11:00 am	0.7 ± 0.3	2017-12-04
7976783	A125	2017-11-27 @ 4:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7976779	A126	2017-11-27 @ 4:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7976767	A128	2017-11-27 @ 4:00 pm	2017-11-30 @ 10:00 am	< 0.3	2017-12-04
7976771	A129	2017-11-27 @ 4:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7976772	A130	2017-11-27 @ 4:00 pm	2017-11-30 @ 10:00 am	< 0.3	2017-12-04
7976774	A131	2017-11-27 @ 4:00 pm	2017-11-30 @ 10:00 am	< 0.3	2017-12-04
7976778	A132	2017-11-27 @ 4:00 pm	2017-11-30 @ 10:00 am	0.8 ± 0.3	2017-12-04
7977086	A203	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977085	A211	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977099	A211	2017-11-27 @ 11:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-05
7977096	A212	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977089	A224	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977079	A226	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-05
7977078	A228	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977087	A229	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977092	A230	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977064	B110	2017-11-27 @ 9:00 pm	2017-11-30 @ 3:00 pm	< 0.3	2017-12-04
7977071	B110C	2017-11-27 @ 9:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7977074	B110D	2017-11-27 @ 9:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7977067	B110E	2017-11-27 @ 9:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977066	B110F	2017-11-27 @ 9:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977069	B110H	2017-11-27 @ 9:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7977072	B115A	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977082	B115B	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977081	B115C	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977073	B115E	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977090	B135B	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04

Radon test result report for:
NORTHWOOD HS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7977076	B135	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977094	B135A	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977097	B135B	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977098	B135C	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977084	B139	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977091	B139A	2017-11-27 @ 10:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977068	B147	2017-11-27 @ 9:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7977058	B148	2017-11-27 @ 9:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7977062	B148A	2017-11-27 @ 9:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7977063	B148B	2017-11-27 @ 9:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7976751	C 100 E	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	< 0.3	2017-12-04
7976753	C 100 F	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	1.2 ± 0.3	2017-12-04
7976749	C 100 H	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	< 0.3	2017-12-05
7976746	C100	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	0.5 ± 0.3	2017-12-04
7976745	C100	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	< 0.3	2017-12-05
7976752	C100 A	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	0.5 ± 0.3	2017-12-05
7976748	C100 D	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	1.1 ± 0.3	2017-12-04
7976755	C100 J	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	< 0.3	2017-12-04
7976750	C100J	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	< 0.3	2017-12-04
7976756	C101	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	0.6 ± 0.3	2017-12-05
7976757	C102	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	< 0.3	2017-12-04
7976763	C105	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	< 0.3	2017-12-04
7976754	C106	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	< 0.3	2017-12-04
7976759	C107	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	0.8 ± 0.3	2017-12-04
7976766	C108	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	0.8 ± 0.3	2017-12-04
7976760	C108	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	1.4 ± 0.3	2017-12-04
7976769	C108	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	< 0.3	2017-12-04
7976770	C108	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	1.2 ± 0.3	2017-12-04
7976765	C108	2017-11-27 @ 3:00 pm	2017-11-30 @ 10:00 am	0.8 ± 0.3	2017-12-04
7976761	C116	2017-11-27 @ 4:00 pm	2017-11-30 @ 10:00 am	0.7 ± 0.3	2017-12-04
7977049	D100	2017-11-27 @ 8:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7977050	D102B	2017-11-27 @ 8:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977046	D145	2017-11-27 @ 8:00 pm	2017-11-30 @ 12:00 pm	0.9 ± 0.3	2017-12-04
7977042	D145	2017-11-27 @ 8:00 pm	2017-11-30 @ 1:00 pm	0.7 ± 0.3	2017-12-04
7977047	D145	2017-11-27 @ 8:00 pm	2017-11-30 @ 12:00 pm	< 0.3	2017-12-04
7977043	D148B	2017-11-27 @ 8:00 pm	2017-11-30 @ 1:00 pm	1.8 ± 0.3	2017-12-04
7977038	DNC	2017-11-27 @ 8:00 pm	2017-11-30 @ 1:00 pm	1.5 ± 0.3	2017-12-04

Radon test result report for:
NORTHWOOD HS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7977039	E101A	2017-11-27 @ 8:00 pm	2017-11-30 @ 12:00 pm	< 0.3	2017-12-04
7977040	E101B	2017-11-27 @ 8:00 pm	2017-11-30 @ 12:00 pm	< 0.3	2017-12-04
7977029	E101C	2017-11-27 @ 8:00 pm	2017-11-30 @ 3:00 pm	< 0.3	2017-12-04
7977025	E101C	2017-11-27 @ 8:00 pm	2017-11-30 @ 12:00 pm	< 0.3	2017-12-04
7977032	E101C	2017-11-27 @ 8:00 pm	2017-11-30 @ 12:00 pm	< 0.3	2017-12-04
7977035	E103	2017-11-27 @ 7:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977033	E107	2017-11-27 @ 7:00 pm	2017-11-30 @ 12:00 pm	< 0.3	2017-12-04
7977034	E109	2017-11-27 @ 7:00 pm	2017-11-30 @ 3:00 pm	< 0.3	2017-12-04
7977037	E112	2017-11-27 @ 8:00 pm	2017-11-30 @ 12:00 pm	< 0.3	2017-12-04
7977056	E122	2017-11-27 @ 9:00 pm	2017-11-30 @ 12:00 pm	< 0.3	2017-12-04
7977057	E122	2017-11-27 @ 9:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977052	E122	2017-11-27 @ 9:00 pm	2017-11-30 @ 12:00 pm	< 0.3	2017-12-04
7977027	F107	2017-11-27 @ 7:00 pm	2017-11-30 @ 10:00 am	0.5 ± 0.3	2017-12-04
7977030	F110	2017-11-27 @ 7:00 pm	2017-11-30 @ 12:00 pm	< 0.3	2017-12-04
7977028	F111	2017-11-27 @ 7:00 pm	2017-11-30 @ 12:00 pm	< 0.3	2017-12-04
7977023	F111	2017-11-27 @ 7:00 pm	2017-11-30 @ 12:00 pm	< 0.3	2017-12-04
7977026	F112	2017-11-27 @ 7:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7977024	F113	2017-11-27 @ 7:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7977004	F115	2017-11-27 @ 6:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-05
7976800	F117	2017-11-27 @ 5:00 pm	2017-11-30 @ 1:00 pm	0.8 ± 0.3	2017-12-04
7976799	F117A	2017-11-27 @ 5:00 pm	2017-11-30 @ 1:00 pm	0.5 ± 0.3	2017-12-04
7976797	F120	2017-11-27 @ 5:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7976792	F122	2017-11-27 @ 5:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7976782	F122	2017-11-27 @ 5:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7976789	F122	2017-11-27 @ 5:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7976795	F122 B	2017-11-27 @ 5:00 pm	2017-11-30 @ 11:00 am	1.7 ± 0.4	2017-12-04
7976794	F122A	2017-11-27 @ 5:00 pm	2017-11-30 @ 11:00 am	0.6 ± 0.3	2017-12-04
7976796	F122C	2017-11-27 @ 5:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7977021	F128 ofc	2017-11-27 @ 7:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-05
7977013	F128D	2017-11-27 @ 7:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7977018	F134	2017-11-27 @ 7:00 pm	2017-11-30 @ 11:00 am	0.5 ± 0.3	2017-12-04
7977044	G109	2017-11-27 @ 8:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7977045	G109A	2017-11-27 @ 8:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7977051	G118	2017-11-27 @ 8:00 pm	2017-11-30 @ 1:00 pm	0.5 ± 0.3	2017-12-05
7977059	G124	2017-11-27 @ 9:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7977060	G124	2017-11-27 @ 9:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7977054	G124	2017-11-27 @ 9:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-05

Radon test result report for:
NORTHWOOD HS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7977061	G125	2017-11-27 @ 9:00 pm	2017-11-30 @ 1:00 pm	< 0.3	2017-12-04
7977999	OB	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7977989	OB	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7977002	W10	2017-11-27 @ 6:00 pm	2017-11-30 @ 11:00 am	0.6 ± 0.3	2017-12-04
7977008	W12	2017-11-27 @ 6:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-05
7977016	W125	2017-11-27 @ 6:00 pm	2017-11-30 @ 2:00 pm	< 0.3	2017-12-04
7977020	W125	2017-11-27 @ 6:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7977015	W125	2017-11-27 @ 6:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-05
7977017	W127	2017-11-27 @ 6:00 pm	2017-11-30 @ 3:00 pm	< 0.3	2017-12-04
7977011	W15	2017-11-27 @ 6:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7977012	W16	2017-11-27 @ 6:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-05
7977005	W2	2017-11-27 @ 6:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7977009	W3	2017-11-27 @ 6:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7977001	W4	2017-11-27 @ 6:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7977006	W4	2017-11-27 @ 6:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-05
7977010	W6	2017-11-27 @ 6:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04
7977007	W8	2017-11-27 @ 6:00 pm	2017-11-30 @ 11:00 am	< 0.3	2017-12-04

December 21, 2017

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
NORTHWOOD HS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7976785	A114	@	@		
7977095	A223	@	@		
7977077	B115	@	@		
7977080	B115D	@	@		
7976762	C105	@	@		
7977041	D145	@	@		
7977022	F128	@	@		
7977055	G128	@	@		

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



MCPS RADON TESTING

Executive Summary: Northwood High School

Date of Test Report:	10/19/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	47
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	0.8

Project Status:

Post remediation testing completed; no further action at this time.



October 19, 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: Northwood High School
919 University Boulevard West
Silver Spring, MD 20901

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 Northwood High School, located at 919 University Boulevard West in Silver Spring, Maryland 20901 (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-two (52) 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:

- Post-mitigation testing for radon mitigation systems installed recently.

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

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

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 lab transit blanks and office 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		
Northwood High School		
Test Period: 09/26/16-09/29/16		
Kit Number	Room / Area	Result
7714147	A104	< 0.3
7714140	A105	< 0.3
7714129	A129	0.6
7714144	A130	< 0.3
7714143	A131	< 0.3
7714150	B102	< 0.3
7802192	B104	< 0.3
7802168	B110	< 0.3
7802195	B110C	< 0.3
7802199	B110D	0.5
7802171	B110H	< 0.3
7714142	B115	0.6
7802188	B115A	< 0.3
7802189	B115B	< 0.3
7802170	B115C	< 0.3
7714138	* B115E (Tampered)	< 0.3
7802200	B147	< 0.3
7802134	B148	< 0.3
7802193	B148A	0.7
7802196	D100	< 0.3
7802194	* D100A (Tampered)	< 0.3
7802181	* D102 (Tampered)	< 0.3
7714149	D102B	< 0.3
7802173	D141	< 0.3
7802197	D145	< 0.3
7802191	* D145 (Tampered)	0.5
7802169	D145F (Storage)	< 0.3
7802166	E104	< 0.3
7802149	F113	0.5
7802165	F115	< 0.3
7802158	F115A	< 0.3
7802179	* F117 (Tampered)	0.7
7802180	F125	< 0.3
7714145	G108B	0.8
7802190	G121	< 0.3
7802198	G122	< 0.3
7802187	G124	< 0.3
7802174	W1	< 0.3
7802111	W10	< 0.3
7802175	W11	< 0.3
7802167	W12	< 0.3
7802159	W2	0.6
7802153	W3	< 0.3
7802152	W4	< 0.3
7802147	W6	< 0.3
7802164	W7	< 0.3

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Northwood High School		
Test Period: 09/26/16-09/29/16		
Kit Number	Room / Area	Result
7802103	W8	< 0.3
7802116	W9	0.6

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Northwood High School		
Test Period: 09/26/16-09/29/16		
Kit Number	QC Type	Result
7714146	* D (B110C:Tampered)	< 0.3
7802172	D (D141)	< 0.3
7802119	D (G124)	< 0.3
7802117	D (W4)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:
NORTHWOOD HIGH SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7714147	A104	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714140	A105	2016-09-26 @ 10:00 am	2016-09-29 @ 9:00 am	< 0.3	2016-10-03
7714129	A129	2016-09-26 @ 10:00 am	2016-09-29 @ 9:00 am	0.6 ± 0.3	2016-10-03
7714144	A130	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714143	A131	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714150	B102	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802192	B104	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802168	B110	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714146	B110C	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802195	B110C	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802199	B110D	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	0.5 ± 0.3	2016-10-03
7802171	B110H	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714142	B115	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	0.6 ± 0.3	2016-10-03
7802188	B115A	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802170	B115C	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802189	B115B	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714138	B115E	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802200	B147	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802134	B148	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802193	B148A	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	0.7 ± 0.3	2016-10-03
7802196	D100	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802194	D100A	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802181	D102	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714149	D102B	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802172	D141	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802173	D141	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802191	D145	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	0.5 ± 0.3	2016-10-03
7802197	D145	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802169	D145F	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802166	E104	2016-09-26 @ 12:00 pm	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802149	F113	2016-09-26 @ 12:00 pm	2016-09-29 @ 11:00 am	0.5 ± 0.3	2016-10-03
7802165	F115	2016-09-26 @ 12:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802158	F115A	2016-09-26 @ 12:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802179	F117	2016-09-26 @ 12:00 pm	2016-09-29 @ 11:00 am	0.7 ± 0.3	2016-10-03
7802180	F125	2016-09-26 @ 12:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7714145	G108B	2016-09-26 @ 11:00 am	2016-09-29 @ 10:00 am	0.8 ± 0.3	2016-10-03
7802190	G121	2016-09-26 @ 12:00 pm	2016-09-29 @ 10:00 am	< 0.3	2016-10-03

October 7, 2016

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**NORTHWOOD HIGH SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7802198	G122	2016-09-26 @ 12:00 pm	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802187	G124	2016-09-26 @ 12:00 pm	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802119	G124	2016-09-26 @ 12:00 pm	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802174	W1	2016-09-26 @ 12:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802111	W10	2016-09-26 @ 12:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802175	W11	2016-09-26 @ 12:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802167	W12	2016-09-26 @ 12:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802159	W2	2016-09-26 @ 12:00 pm	2016-09-29 @ 11:00 am	0.6 ± 0.3	2016-10-03
7802153	W3	2016-09-26 @ 12:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802152	W4	2016-09-26 @ 12:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802117	W4	2016-09-26 @ 12:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802147	W6	2016-09-26 @ 12:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802164	W7	2016-09-26 @ 12:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802103	W8	2016-09-26 @ 12:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802116	W9	2016-09-26 @ 12:00 pm	2016-09-29 @ 11:00 am	0.6 ± 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
2. Cedar Grove Elementary School
3. Hallie Wells Middle School
4. Clarksburg Elementary School
5. Clarksburg High School
6. Woodlin Elementary School
7. Flora Singer Elementary School
8. Spring Mill Center
9. Dr. Charles Drew Elementary School
10. William Farquah Middle School
11. Rosa Parks Middle School
12. Blair Ewing Center
13. Lathrop Smith Environmental Center
14. Sequoyah Elementary School
15. Shady Grove Middle School
16. Captain James Daly Elementary School
17. Watkins Mills High School
18. Forest Oak Middle School
19. Gaithersburg Middle School
20. Emory Grove
21. Fields Road Elementary School
22. Beall Elementary School
23. Julius West Middle School
24. Thomas Wootton High School
25. Robert Frost High School
26. Travilah Elementary School
27. Jones Lane Elementary School
28. Longview School
29. Rock Terrace High School
30. Germantown Elementary School
31. Lake Seneca 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 NORTHWOOD HIGH SCHOOL

919 University Boulevard, Silver Spring, Maryland 20901

EXECUTIVE SUMMARY

Date of Test Report:	5/18/16 Follow-Up
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	26
# Rooms \geq 4.0 pCi/L:	1
Low Value:	<0.3
High Value:	4.4
Confirmed Rooms \geq 4.0 pCi/L US EPA Action Level	7

Summary of Sampling Events \geq 4.0 pCi/L

Room	Result (pCi/L) 3/18/16 Initial	Result (pCi/L) 4/20/16 Follow-Up	Result (pCi/L) 5/18/16 Follow-Up	Average Result (pCi/L)
W4	12.2	3.1	1.7	5.7
B115A	11.3	7.3	0.8	6.5
B115B	10.5	4.7	2.7	6.0
B147	8.0	3.7	1.4	4.4
B115E	7.2	5.1	4.4	5.6
B110D	6.4	3.4	2.5	4.1
D100	6.3	1.7	--- Missing	4.0
W1	6.0	1.0	0.9	2.7
F115	5.4	1.7	1.0	2.7
E104	5.1	<0.3	<0.3	1.9
A130	4.9	4.1	1.8	3.6
W8	4.8	Not Sampled	1.1	3.0
B110C	4.7	Not Sampled	2.6	3.7
F115A	4.3	Not Sampled	1.0	2.7
W2	4.0	Not Sampled	0.7	2.4
D145	---Missing	Not Sampled	1.6	1.6
D150	---Missing	Not Sampled	0.9	0.9
E201	---Missing	Not Sampled	<0.3	<0.3
F110	---Missing	Not Sampled	0.5	0.5
F124	---Missing	Not Sampled	0.6	0.6
B102	3.7	Not Sampled	Not Tested	3.7
B110	3.5	Not Sampled	2.0	2.8
B110H	3.8	Not Sampled	2.1	3.0
B115C	3.6	Not Sampled	2.8	3.2

D102B	3.6	Not Sampled	0.8	2.2
G121	3.5	Not Sampled	1.7	2.6
W7	3.7	Not Sampled	0.8	2.3



MCPS RADON TESTING

Executive Summary: Northwood High School

Date of Test Report:	5/18/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	26
# Rooms \geq 4.0 pCi/L:	1
Low Value:	0.5
High Value:	4.4

Rooms with results \geq 4.0 pCi/L:
B115E (4.4 pCi/L)

Project Status:

Retesting completed; use the average of the initial and re-test results in a room to determine if remediation is necessary.

Retesting completed; missing or compromised samples need re-test. (Room D100).



May 18, 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 # 12146341.38

Location: Northwood High School
919 University Boulevard West
Silver Spring, MD 20901

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 Northwood High School, located at 919 University Boulevard West in Silver Spring, Maryland 20901 (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 April 28, 2016 and deployed thirty-two (32) 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 May 2, 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.

School personnel informed KCI during the sample collection that numerous windows were opened for extended periods during the testing due to a problem with the facility's HVAC system.

Results:

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
≥ 4.0 pCi/L	B115E	4.4
< 4.0 pCi/L	See Attachment B	

Notes:

D- Duplicate sample

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

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

Our professional services have been performed in accordance with customary principles and practices in the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at (410) 316-7800.

Sincerely,



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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank*

PM- Project Manager

QC- Quality Control

*Office blanks were submitted at a rate of 1% for all samples deployed in Phase 15 testing. Office blanks were not submitted under each school individually.

Radon Testing Results		
Northwood High School		
Test Period: 04/25/16-04/28/16		
Kit Number	Room / Area	Result
7747896	A130	1.8
7747536	B110	2.0
7752166	B110C	2.6
7752170	B110D	2.5
7747562	B110H	2.1
7747561	B115A	0.8
7752175	B115B	2.7
7752184	B115C	2.8
7752198	B115E	4.4
7752173	B147	1.4
7752167	* D100 (Missing)	-
7752188	D102B	0.8
7752185	D145	1.6
7752183	D145	1.0
7747583	D150	0.9
7752171	* D150 (Missing)	-
7752168	E104	< 0.3
7752169	E201	< 0.3
7752178	F110	0.5
7752172	F115	1.0
7752179	F115A	1.0
7752176	F124	0.6
7747582	G121	1.7
7752174	W1	0.9
7752180	W2	0.7
7747579	W4	1.7
7747535	W7	0.8
7752177	W8	1.1

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Northwood High School		
Test Period: 04/25/16-04/28/16		
Kit Number	QC Type	Result
7747584	D (B147)	1.1
7752181	D (D145)	1.5
7747574	D (G121)	1.8
7752163	FB (D145)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

May 10, 2016 ** LABORATORY ANALYSIS REPORT **

Radon test result report for:
**NORTHWOOD HIGH SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7747896	A130	2016-04-25 @ 7:00 am	2016-04-28 @ 7:00 am	1.8 ± 0.3	2016-05-02
7747536	B110	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	2.0 ± 0.3	2016-05-02
7752166	B110C	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	2.6 ± 0.3	2016-05-02
7752170	B110D	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	2.5 ± 0.3	2016-05-02
7747562	B110H	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	2.1 ± 0.3	2016-05-02
7747561	B115A	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	0.8 ± 0.3	2016-05-02
7752175	B115B	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	2.7 ± 0.3	2016-05-02
7752184	B115C	2016-04-25 @ 7:00 am	2016-04-28 @ 7:00 am	2.8 ± 0.3	2016-05-02
7752198	B115E	2016-04-25 @ 7:00 am	2016-04-28 @ 7:00 am	4.4 ± 0.4	2016-05-02
7747584	B147	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	1.1 ± 0.3	2016-05-02
7752173	B147	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	1.4 ± 0.3	2016-05-02
7752167	D100	@	@		
7752188	D102B	2016-04-25 @ 10:00 am	2016-04-28 @ 7:00 am	0.8 ± 0.3	2016-05-02
7752181	D145	2016-04-25 @ 10:00 am	2016-04-28 @ 7:00 am	1.5 ± 0.3	2016-05-02
7752183	D145	2016-04-25 @ 10:00 am	2016-04-28 @ 7:00 am	1.0 ± 0.3	2016-05-02
7752185	D145	2016-04-25 @ 10:00 am	2016-04-28 @ 7:00 am	1.6 ± 0.3	2016-05-02
7752163	D145	2016-04-25 @ 10:00 am	2016-04-28 @ 7:00 am	< 0.3	2016-05-02
7752171	D150	@	@		
7747583	D150	2016-04-25 @ 10:00 am	2016-04-28 @ 7:00 am	0.9 ± 0.3	2016-05-02
7752168	E104	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	< 0.3	2016-05-02
7752169	E201	2016-04-25 @ 10:00 am	2016-04-28 @ 7:00 am	< 0.3	2016-05-02
7752178	F110	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	0.5 ± 0.3	2016-05-02
7752172	F115	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	1.0 ± 0.3	2016-05-02
7752179	F115A	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	1.0 ± 0.3	2016-05-02
7752176	F124	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	0.6 ± 0.3	2016-05-02
7747574	G121	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	1.8 ± 0.3	2016-05-02
7747582	G121	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	1.7 ± 0.3	2016-05-02
7752174	W1	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	0.9 ± 0.3	2016-05-02
7752180	W2	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	0.7 ± 0.3	2016-05-02
7747579	W4	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	1.7 ± 0.3	2016-05-02
7747535	W7	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	0.8 ± 0.3	2016-05-02
7752177	W8	2016-04-25 @ 8:00 am	2016-04-28 @ 7:00 am	1.1 ± 0.3	2016-05-02

May 9, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
OFFICE BLANK
Phase 15

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7756755	0	2016-05-02 @ 12:00 pm	2016-05-05 @ 12:00 pm	< 0.3	2016-05-09

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

May 11, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
TRANSIT BLANK
Phase 14 & 15

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7752162	1	2016-04-11 @ 4:00 pm	2016-04-14 @ 4:00 pm	< 0.3	2016-04-18

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

March 24, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
MCPS
Spike Sample Results

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7735295	1	2016-03-18 @ 1:00 pm	2016-03-21 @ 1:00 pm	30.0 ± 2.0	2016-03-24
7735289	2	2016-03-18 @ 1:00 pm	2016-03-21 @ 1:00 pm	29.9 ± 2.0	2016-03-24
7735274	3	2016-03-18 @ 1:00 pm	2016-03-21 @ 1:00 pm	25.6 ± 1.7	2016-03-24
7735278	4	2016-03-18 @ 1:00 pm	2016-03-21 @ 1:00 pm	26.2 ± 1.8	2016-03-24
7735299	5	2016-03-18 @ 1:00 pm	2016-03-21 @ 1:00 pm	28.3 ± 1.9	2016-03-24
7735293	6	2016-03-18 @ 1:00 pm	2016-03-21 @ 1:00 pm	31.0 ± 2.0	2016-03-24

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 174430

NOMINAL Conditions: Radon Conc 26.1 pCi/L Rel. Hum 48.8 % Temp. 79.1 F

Date Start: 3/18/16 Date Stop: 3/21/16 Date Start: _____ Date Stop: _____

Time Start: 1250 Time Stop: 1250 Time Start: _____ Time Stop: _____

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

3029154 thru 3029157, _____

3029083, 3029086 _____

FS Right

Date Start: 3/18/16 Date Stop: 3/21/16 Date Start: _____ Date Stop: _____

Time Start: 1250 Time Stop: 1250 Time Start: _____ Time Stop: _____

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

7735299, 7735293, 7735295, _____

7735274, 7735278, 7735289 _____

FS Right

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 15

Name of Schools:

1. Laytonsville ES

	Date	Initials
Radon Test Kits Deployed	5/2/16	JM
Radon Test Kits Collected	5/5/16	JM
Radon Test Kits Shipped to Lab*	5/5/16	JM
Radon Test Kits Received by Lab*	5/9/16	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 15

Name of Schools:

1. Northwood HS

	Date	Initials
Radon Test Kits Deployed	4/25/16	JM
Radon Test Kits Collected	4/28/16	JM
Radon Test Kits Shipped to Lab*	4/28/16	JM
Radon Test Kits Received by Lab*	5/2/16	JM

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



MCPS RADON TESTING

Executive Summary: Northwood High School

Date of Test Report:	4/20/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	15
# Rooms \geq 4.0 pCi/L:	4
Low Value:	< 0.3
High Value:	7.3

Rooms with results \geq 4.0 pCi/L:

B115A (7.3 pCi/L), B115E (5.1 pCi/L), B115B (4.7 pCi/L), A130 (4.1 pCi/L)

Project Status:

Retesting completed; use the average of the initial and re-test results in a room to determine if remediation is necessary.

Additional rooms need re-testing: (W8, B110C, F115A, W2, D145, D150, E201, F110, F124, B102, B110, B110H, B115C, D102B, G121, W7)



April 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 # 12146341.34

Location: Northwood High School
919 University Boulevard West
Silver Spring, MD 20901

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 Northwood High School, located at 919 University Boulevard West in Silver Spring, Maryland 20901 (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 March 29, 2016 and deployed fifteen (15) 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 April 1, 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.

School personnel informed KCI during the sample collection that numerous windows were opened for extended periods during the testing due to a problem with the facility's HVAC system.

Results:

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
≥ 4.0 pCi/L	B115A	7.3
	B115E	5.1
	B115B	4.7
	A130	4.1
< 4.0 pCi/L	See Attachment B	

Notes:
D- Duplicate sample

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

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

Our professional services have been performed in accordance with customary principles and practices in

the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at (410) 316-7800.

Sincerely,



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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank*

PM- Project Manager

QC- Quality Control

*Office blanks were submitted at a rate of 1% for all samples deployed in Phase 13 testing. Office blanks were not submitted under each school individually.

Radon Testing Results		
Northwood High School		
Test Period: 03/29/16-04/01/16		
Kit Number	Room / Area	Result
7747818	A130	4.1
7747815	B110D	3.4
7747819	B115A	7.3
7747812	B115B	4.7
7747820	B115E	5.1
7747806	B147	3.7
7747817	D100	1.7
7747804	E104	< 0.3
7747825	F115	1.7
7747807	W1	1.0
7747811	W4	3.1

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Northwood High School		
Test Period: 03/29/16-04/01/16		
Kit Number	QC Type	Result
7747809	D (B115A)	6.0
7747805	D (B147)	3.0
7747802	FB (B115A)	< 0.3
7747803	FB (E104)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

April 8, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**NORTHWOOD HIGH SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7747818	A130	2016-03-29 @ 10:00 am	2016-04-01 @ 10:00 am	4.1 ± 0.4	2016-04-05
7747815	B110D	2016-03-29 @ 9:00 am	2016-04-01 @ 10:00 am	3.4 ± 0.4	2016-04-05
7747802	B115A	2016-03-29 @ 9:00 am	2016-04-01 @ 10:00 am	< 0.3	2016-04-05
7747809	B115A	2016-03-29 @ 9:00 am	2016-04-01 @ 10:00 am	6.0 ± 0.4	2016-04-05
7747819	B115A	2016-03-29 @ 9:00 am	2016-04-01 @ 10:00 am	7.3 ± 0.5	2016-04-05
7747812	B115B	2016-03-29 @ 9:00 am	2016-04-01 @ 10:00 am	4.7 ± 0.4	2016-04-05
7747820	B115E	2016-03-29 @ 9:00 am	2016-04-01 @ 10:00 am	5.1 ± 0.4	2016-04-05
7747805	B147	2016-03-29 @ 9:00 am	2016-04-01 @ 10:00 am	3.0 ± 0.4	2016-04-05
7747806	B147	2016-03-29 @ 9:00 am	2016-04-01 @ 10:00 am	3.7 ± 0.4	2016-04-05
7747817	D100	2016-03-29 @ 10:00 am	2016-04-01 @ 10:00 am	1.7 ± 0.3	2016-04-05
7747803	E104	2016-03-29 @ 10:00 am	2016-04-01 @ 10:00 am	< 0.3	2016-04-05
7747804	E104	2016-03-29 @ 10:00 am	2016-04-01 @ 10:00 am	< 0.3	2016-04-05
7747825	F115	2016-03-29 @ 10:00 am	2016-04-01 @ 10:00 am	1.7 ± 0.3	2016-04-05
7747807	W1	2016-03-29 @ 10:00 am	2016-04-01 @ 10:00 am	1.0 ± 0.3	2016-04-05
7747811	W4	2016-03-29 @ 10:00 am	2016-04-01 @ 10:00 am	3.1 ± 0.3	2016-04-05

April 8, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
OFFICE BLANKS
Phase 13

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7726894	0	2016-03-29 @ 3:00 pm	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
7747563	0	2016-03-29 @ 3:00 pm	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
7747791	0	2016-03-29 @ 3:00 pm	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
7747792	0	2016-03-29 @ 3:00 pm	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05

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

April 8, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
TRANSIT BLANKS
Phase 13

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7747741	1	2016-03-29 @ 3:00 pm	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
7747742	2	2016-03-29 @ 3:00 pm	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
7726876	3	2016-03-29 @ 3:00 pm	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
7726875	4	2016-03-29 @ 3:00 pm	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05

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

March 24, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
MCPS
Spike Sample Results

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7735295	1	2016-03-18 @ 1:00 pm	2016-03-21 @ 1:00 pm	30.0 ± 2.0	2016-03-24
7735289	2	2016-03-18 @ 1:00 pm	2016-03-21 @ 1:00 pm	29.9 ± 2.0	2016-03-24
7735274	3	2016-03-18 @ 1:00 pm	2016-03-21 @ 1:00 pm	25.6 ± 1.7	2016-03-24
7735278	4	2016-03-18 @ 1:00 pm	2016-03-21 @ 1:00 pm	26.2 ± 1.8	2016-03-24
7735299	5	2016-03-18 @ 1:00 pm	2016-03-21 @ 1:00 pm	28.3 ± 1.9	2016-03-24
7735293	6	2016-03-18 @ 1:00 pm	2016-03-21 @ 1:00 pm	31.0 ± 2.0	2016-03-24

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 174430

NOMINAL Conditions: Radon Conc 26.1 pCi/L Rel. Hum 48.8 % Temp. 79.1 F

Date Start: 3/18/16 Date Stop: 3/21/16 Date Start: _____ Date Stop: _____

Time Start: 1250 Time Stop: 1250 Time Start: _____ Time Stop: _____

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

3029154 thru 3029157, _____

3029083, 3029086 _____

FS Right

Date Start: 3/18/16 Date Stop: 3/21/16 Date Start: _____ Date Stop: _____

Time Start: 1250 Time Stop: 1250 Time Start: _____ Time Stop: _____

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

7735299, 7735293, 7735295, _____

7735274, 7735278, 7735289 _____

FS Right

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 13

Name of Schools:

1. Northwood HS
2. South Lake ES
3. Whetstone ES
4. Springbrook HS
5. Kensington Parkwood ES

	Date	Initials
Radon Test Kits Deployed	3/29/16	JM
Radon Test Kits Collected	4/1/16	JM
Radon Test Kits Shipped to Lab*	4/1/16	JM
Radon Test Kits Received by Lab*	4/5/16	JM

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



MCPS RADON TESTING

Executive Summary: Northwood High School

Date of Test Report:	3/18/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	124
# Rooms \geq 4.0 pCi/L:	15
Low Value:	< 0.3
High Value:	12.2

Rooms with results \geq 4.0 pCi/L:

W4 (12.2 pCi/L), B115A (11.3 pCi/L), B115B (10.5 pCi/L), B147 (8.0 pCi/L), B115E (7.2 pCi/L), B110D (6.4 pCi/L), D100 (6.3 pCi/L), W1 (6.0 pCi/L), F115 (5.4 pCi/L), E104 (5.1 pCi/L), A130 (4.9 pCi/L), W8 (4.8 pCi/L), B110C (4.7 pCi/L), F115A (4.3 pCi/L), W2 (4.0 pCi/L)

Project Status:

Initial testing completed; re-test needed for results \geq 4.0 pCi/L.
Initial testing completed; missing or compromised samples need re-test.
Initial testing completed; locked/inaccessible rooms need testing (E123A).



March 18, 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 # 12146341.29

Location: Northwood High School
919 University Boulevard West
Silver Spring, MD 20901

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 Northwood High School, located at 919 University Boulevard West in Silver Spring, Maryland 20901 (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 22, 2016 and deployed one hundred fifty-three (153) 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 February 25, 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.

School personnel informed KCI during the sample collection that numerous windows were opened for extended periods during the testing due to a problem with the facility's HVAC system.

Results:

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
≥ 4.0 pCi/L	W4	12.2
	B115A	11.3
	B115B	10.5
	B147	8.0
	B115E	7.2
	B110D	6.4, 5.6 (D)
	D100	6.3
	W1	6.0
	F115	5.4
	E104	5.1
	A130	4.9
	W8	4.8
	B110C	4.7
	F115A	4.3
W2	4.0	
< 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. Moulds
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 9 testing. Office blanks were not submitted under each school individually.

Radon Testing Results		
Northwood High School		
Test Period: 02/22/16-02/25/16		
Kit Number	Room / Area	Result
7734902	A103	2.3
7734925	A104	0.8
7734917	A105	2.3
7735081	A111	1.1
7734991	A112	0.6
7734992	A113	1.4
7734967	A114	2.0
7734970	A115	3.1
7734979	A116	1.5
7734995	A120	1.5
7734975	A121	1.8
7734969	A122	2.1
7734997	A123	1.6
7734971	A125	0.7
7734972	A126	< 0.3
7734974	A126	0.6
7734923	A129	1.3
7734999	A130	4.9
7734924	A131	2.7
7734901	A132	2.6
7735039	A211	< 0.3
7735002	A212	0.6
7735014	A223	0.6
7735080	A224	< 0.3
7735003	A225	< 0.3
7734904	AUD	2.4
7734914	AUD	3.2
7734922	AUD	2.4
7735000	AUD	2.3
7735099	B102	3.7
7735097	B105B	3.3
7735056	B110	3.5
7735065	B110C	4.7
7735061	B110D	6.4
7735060	B110E	3.3
7735057	B110H	3.8
7735088	B110H	3.1
7735085	B115	3.2
7735064	B115A	11.3
7735098	B115B	10.5
7735067	B115C	3.6
7735069	B115D	2.9
7735100	B115E	7.2
7735072	B135	1.0
7735092	B135A	1.7
7735048	B135B	1.8

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Northwood High School		
Test Period: 02/22/16-02/25/16		
Kit Number	Room / Area	Result
7735096	B135C	2.3
7735074	B139	1.3
7735073	B139A	1.2
7735087	B147	8.0
7735053	B148	3.1
7734907	C100A	2.1
7734913	C100B	1.5
7734920	C100D	3.1
7734919	C100E	1.8
7734927	C100F	1.8
7734918	C100G	1.5
7734908	C100H	1.6
7734941	C100I	1.9
7734909	C101	2.1
7734963	C-102	1.6
7734912	C103	2.0
7734926	C104	2.2
7734962	C105	1.8
7734916	C106	2.0
7734906	C107	1.7
7734993	C116	1.6
7735079	C202	0.8
7735004	C203	1.3
7735083	C206	1.2
7735086	CAFETERIA	2.0
7735094	CAFETERIA	1.5
7735042	D100	6.3
7735008	D102B	3.6
7735084	D141	3.0
7735007	D145	0.8
7735006	* D145 (Missing)	-
7735052	D147	2.1
7735082	D148B	2.6
7735090	D150	0.8
7735091	* D150 (Missing)	-
7735015	E101A	< 0.3
7735033	E101A	0.7
7735051	E101C	1.0
7735063	E101C	< 0.3
7735019	E101D	0.7
7735038	E103	0.7
7735031	E104	5.1
7735034	E107	1.2
7735029	E109	1.5
7735035	E112AQ	3.4
7735037	E115	0.7
7735095	E120	3.4
7735076	* E201 (Missing)	-
7735068	E203	0.8
7735078	E204	0.8

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Northwood High School		
Test Period: 02/22/16-02/25/16		
Kit Number	Room / Area	Result
7735077	E208	1.0
7735075	E209	0.7
7735071	E210	0.8
7735046	F107	0.5
7735047	F107A	0.7
7735030	* F110 (Missing)	-
7735062	F111	0.6
7735054	F112	0.7
7735055	F113	0.7
7734984	F115	5.4
7734910	F115A	4.3
7734983	F117	1.0
7734968	F119	1.9
7734981	F120	0.9
7734976	F122A	1.1
7734994	F122B	1.1
7734911	F122C	1.2
7734915	F124	1.6
7734982	* F124 (Missing)	-
7735058	F125	3.0
7735059	F128	1.0
7735049	F134	< 0.3
7735013	G109	0.8
7735043	G109	0.8
7735022	G118	2.7
7735026	G118	2.9
7735045	G118B	2.7
7735028	G121	3.5
7735023	G124	2.4
7735005	G128	1.9
7734903	MAIN OFF	2.0
7734961	MAIN OFF	1.4
7734978	MEDIA CNT	1.6
7734980	MEDIA CNT	0.9
7734998	MEDIA CNT	1.2
7734996	W1	6.0
7734987	W10	2.4
7735050	W12	2.4
7734985	W2	4.0
7734986	W3	2.9
7734988	W4	12.2
7734989	W6	2.5
7734990	W7	3.7
7734965	W8	4.8

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Northwood High School		
Test Period: 02/22/16-02/25/16		
Kit Number	QC Type	Result
7734977	D (A120)	1.0
7734973	D (A126)	0.7
7734905	D (AUD)	2.6
7735093	D (B110D)	5.6
7735066	D (B135B)	1.9
7734921	D (C100I)	1.6
7735089	D (CAFETERIA)	1.7
7735032	D (F107A)	1.0
7735024	D (G118B)	2.6
7734966	D (W10)	2.5
7735070	FB (B135)	< 0.3
7735025	FB (G118B)	< 0.3
7734964	FB (W10)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

March 17, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**NORTHWOOD HIGH SCHOOL
 MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7734925	A104	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	0.8 ± 0.3	2016-02-29
7734917	A105	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	2.3 ± 0.4	2016-02-29
7735081	A111	2016-02-22 @ 12:00 pm	2016-02-25 @ 10:00 am	1.1 ± 0.4	2016-02-29
7734995	A120	2016-02-22 @ 10:00 am	2016-02-25 @ 9:00 am	1.5 ± 0.4	2016-02-29
7734977	A120	2016-02-22 @ 10:00 am	2016-02-25 @ 9:00 am	1.0 ± 0.4	2016-02-29
7734923	A129	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	1.3 ± 0.4	2016-02-29
7734999	A130	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	4.9 ± 0.6	2016-02-29
7735039	A211	2016-02-22 @ 2:00 pm	2016-02-25 @ 10:00 am	< 0.3	2016-02-29
7735002	A212	2016-02-22 @ 2:00 pm	2016-02-25 @ 10:00 am	0.6 ± 0.3	2016-02-29
7735014	A223	2016-02-22 @ 2:00 pm	2016-02-25 @ 10:00 am	0.6 ± 0.3	2016-02-29
7735080	A224	2016-02-22 @ 2:00 pm	2016-02-25 @ 10:00 am	< 0.3	2016-02-29
7735003	A225	2016-02-22 @ 2:00 pm	2016-02-25 @ 10:00 am	< 0.3	2016-02-29
7735000	AUD	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	2.3 ± 0.4	2016-02-29
7734904	AUD	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	2.4 ± 0.4	2016-02-29
7734905	AUD	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	2.6 ± 0.5	2016-02-29
7734914	AUD	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	3.2 ± 0.5	2016-02-29
7734922	AUD	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	2.4 ± 0.4	2016-02-29
7735099	B102	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	3.7 ± 0.5	2016-02-29
7735097	B105B	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	3.3 ± 0.5	2016-02-29
7735056	B110	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	3.5 ± 0.5	2016-02-29
7735065	B110C	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	4.7 ± 0.6	2016-02-29
7735093	B110D	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	5.6 ± 0.6	2016-02-29
7735061	B110D	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	6.4 ± 0.7	2016-02-29
7735060	B110E	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	3.3 ± 0.5	2016-02-29
7735057	B110H	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	3.8 ± 0.5	2016-02-29
7735088	B110H	2016-02-22 @ 9:00 am	2016-02-25 @ 9:00 am	3.1 ± 0.5	2016-02-29
7735085	B115	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	3.2 ± 0.5	2016-02-29
7735064	B115A	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	11.3 ± 1.0	2016-02-29
7735098	B115B	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	10.5 ± 0.9	2016-02-29
7735067	B115C	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	3.6 ± 0.5	2016-02-29
7735069	B115D	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	2.9 ± 0.5	2016-02-29
7735100	B115E	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	7.2 ± 0.7	2016-02-29
7735070	B135	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	< 0.3	2016-02-29
7735072	B135	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	1.0 ± 0.4	2016-02-29
7735092	B135A	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	1.7 ± 0.4	2016-02-29
7735048	B135B	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	1.8 ± 0.4	2016-02-29
7735066	B135B	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	1.9 ± 0.4	2016-02-29

March 17, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**NORTHWOOD HIGH SCHOOL
 MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7735096	B135C	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	2.3 ± 0.4	2016-02-29
7735074	B139	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	1.3 ± 0.4	2016-02-29
7735073	B139A	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	1.2 ± 0.4	2016-02-29
7735087	B147	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	8.0 ± 0.8	2016-02-29
7735053	B148	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	3.1 ± 0.5	2016-02-29
7734963	C-102	2016-02-22 @ 9:00 am	2016-02-25 @ 9:00 am	1.6 ± 0.4	2016-02-29
7734907	C100A	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	2.1 ± 0.4	2016-02-29
7734913	C100B	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	1.5 ± 0.4	2016-02-29
7734920	C100D	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	3.1 ± 0.5	2016-02-29
7734919	C100E	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	1.8 ± 0.4	2016-02-29
7734927	C100F	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	1.8 ± 0.4	2016-02-29
7734918	C100G	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	1.5 ± 0.4	2016-02-29
7734908	C100H	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	1.6 ± 0.4	2016-02-29
7734921	C100I	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	1.6 ± 0.4	2016-02-29
7734941	C100I	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	1.9 ± 0.4	2016-02-29
7734909	C101	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	2.1 ± 0.4	2016-02-29
7734912	C103	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	2.0 ± 0.4	2016-02-29
7734926	C104	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	2.2 ± 0.4	2016-02-29
7734962	C105	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	1.8 ± 0.4	2016-02-29
7734916	C106	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	2.0 ± 0.4	2016-02-29
7734906	C107	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	1.7 ± 0.4	2016-02-29
7734993	C116	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	1.6 ± 0.4	2016-02-29
7735079	C202	2016-02-22 @ 2:00 pm	2016-02-25 @ 10:00 am	0.8 ± 0.3	2016-02-29
7735004	C203	2016-02-22 @ 2:00 pm	2016-02-25 @ 10:00 am	1.3 ± 0.4	2016-02-29
7735083	C206	2016-02-22 @ 2:00 pm	2016-02-25 @ 10:00 am	1.2 ± 0.4	2016-02-29
7735094	CAFETERIA	2016-02-22 @ 1:00 pm	2016-02-25 @ 9:00 am	1.5 ± 0.4	2016-02-29
7735086	CAFETERIA	2016-02-22 @ 1:00 pm	2016-02-25 @ 9:00 am	2.0 ± 0.4	2016-02-29
7735089	CAFETERIA	2016-02-22 @ 1:00 pm	2016-02-25 @ 9:00 am	1.7 ± 0.4	2016-02-29
7735042	D100	2016-02-22 @ 9:00 am	2016-02-25 @ 9:00 am	6.3 ± 0.7	2016-02-29
7735008	D102B	2016-02-22 @ 12:00 pm	2016-02-25 @ 9:00 am	3.6 ± 0.5	2016-02-29
7735084	D141	2016-02-22 @ 1:00 pm	2016-02-25 @ 9:00 am	3.0 ± 0.5	2016-02-29
7735006	D145	@	@		
7735007	D145	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	0.8 ± 0.3	2016-02-29
7735052	D147	2016-02-22 @ 12:00 pm	2016-02-25 @ 9:00 am	2.1 ± 0.4	2016-02-29
7735082	D148B	2016-02-22 @ 12:00 pm	2016-02-25 @ 9:00 am	2.6 ± 0.4	2016-02-29
7735091	D150	@	@		
7735090	D150	2016-02-22 @ 1:00 pm	2016-02-25 @ 9:00 am	0.8 ± 0.3	2016-02-29

March 17, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**NORTHWOOD HIGH SCHOOL
 MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7735015	E101A	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	< 0.3	2016-02-29
7735033	E101A	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	0.7 ± 0.3	2016-02-29
7735051	E101C	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	1.0 ± 0.4	2016-02-29
7735063	E101C	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	< 0.3	2016-02-29
7735019	E101D	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	0.7 ± 0.3	2016-02-29
7735038	E103	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	0.7 ± 0.3	2016-02-29
7735031	E104	2016-02-22 @ 11:00 am	2016-02-25 @ 10:00 am	5.1 ± 0.6	2016-02-29
7735034	E107	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	1.2 ± 0.4	2016-02-29
7735029	E109	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	1.5 ± 0.4	2016-02-29
7735035	E112AQ	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	3.4 ± 0.5	2016-02-29
7735037	E115	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	0.7 ± 0.3	2016-02-29
7735095	E120	2016-02-22 @ 1:00 pm	2016-02-25 @ 9:00 am	3.4 ± 0.5	2016-02-29
7735076	E201	@	@		
7735068	E203	2016-02-22 @ 2:00 pm	2016-02-25 @ 10:00 am	0.8 ± 0.3	2016-02-29
7735078	E204	2016-02-22 @ 2:00 pm	2016-02-25 @ 10:00 am	0.8 ± 0.3	2016-02-29
7735077	E208	2016-02-22 @ 2:00 pm	2016-02-25 @ 10:00 am	1.0 ± 0.3	2016-02-29
7735075	E209	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	0.7 ± 0.3	2016-02-29
7735071	E210	2016-02-22 @ 1:00 pm	2016-02-25 @ 10:00 am	0.8 ± 0.3	2016-02-29
7735046	F107	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	0.5 ± 0.3	2016-02-29
7735032	F107A	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	1.0 ± 0.4	2016-02-29
7735047	F107A	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	0.7 ± 0.3	2016-02-29
7735030	F110	@	@		
7735062	F111	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	0.6 ± 0.3	2016-02-29
7735054	F112	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	0.7 ± 0.3	2016-02-29
7735055	F113	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	0.7 ± 0.3	2016-02-29
7734984	F115	2016-02-22 @ 10:00 am	2016-02-25 @ 9:00 am	5.4 ± 0.6	2016-02-29
7734910	F115A	2016-02-22 @ 10:00 am	2016-02-25 @ 9:00 am	4.3 ± 0.6	2016-02-29
7734982	F124	@	@		
7735058	F125	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	3.0 ± 0.5	2016-02-29
7735059	F128	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	1.0 ± 0.4	2016-02-29
7735049	F134	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	< 0.3	2016-02-29
7735013	G109	2016-02-22 @ 12:00 pm	2016-02-25 @ 10:00 am	0.8 ± 0.4	2016-02-29
7735043	G109	2016-02-22 @ 12:00 pm	2016-02-25 @ 10:00 am	0.8 ± 0.3	2016-02-29
7735022	G118	2016-02-22 @ 12:00 pm	2016-02-25 @ 9:00 am	2.7 ± 0.5	2016-02-29
7735026	G118	2016-02-22 @ 12:00 pm	2016-02-25 @ 9:00 am	2.9 ± 0.5	2016-02-29
7735024	G118B	2016-02-22 @ 12:00 pm	2016-02-25 @ 9:00 am	2.6 ± 0.5	2016-02-29
7735025	G118B	2016-02-22 @ 12:00 pm	2016-02-25 @ 9:00 am	< 0.3	2016-02-29

March 17, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**NORTHWOOD HIGH SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7735045	G118B	2016-02-22 @ 12:00 pm	2016-02-25 @ 9:00 am	2.7 ± 0.5	2016-02-29
7735028	G121	2016-02-22 @ 12:00 pm	2016-02-25 @ 9:00 am	3.5 ± 0.5	2016-02-29
7735023	G124	2016-02-22 @ 12:00 pm	2016-02-25 @ 9:00 am	2.4 ± 0.4	2016-02-29
7735005	G128	2016-02-22 @ 12:00 pm	2016-02-25 @ 9:00 am	1.9 ± 0.4	2016-02-29
7734903	MAIN OFF	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	2.0 ± 0.4	2016-02-29
7734961	MAIN OFF	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	1.4 ± 0.4	2016-02-29
7734996	W1	2016-02-22 @ 10:00 am	2016-02-25 @ 9:00 am	6.0 ± 0.6	2016-02-29
7734987	W10	2016-02-22 @ 10:00 am	2016-02-25 @ 9:00 am	2.4 ± 0.5	2016-02-29
7734964	W10	2016-02-22 @ 10:00 am	2016-02-25 @ 9:00 am	< 0.3	2016-02-29
7734966	W10	2016-02-22 @ 10:00 am	2016-02-25 @ 9:00 am	2.5 ± 0.5	2016-02-29
7735050	W12	2016-02-22 @ 11:00 am	2016-02-25 @ 9:00 am	2.4 ± 0.5	2016-02-29
7734985	W2	2016-02-22 @ 10:00 am	2016-02-25 @ 9:00 am	4.0 ± 0.5	2016-02-29
7734986	W3	2016-02-22 @ 10:00 am	2016-02-25 @ 9:00 am	2.9 ± 0.5	2016-02-29
7734988	W4	2016-02-22 @ 10:00 am	2016-02-25 @ 9:00 am	12.2 ± 1.0	2016-02-29
7734989	W6	2016-02-22 @ 10:00 am	2016-02-25 @ 9:00 am	2.5 ± 0.5	2016-02-29
7734990	W7	2016-02-22 @ 10:00 am	2016-02-25 @ 9:00 am	3.7 ± 0.5	2016-02-29
7734965	W8	2016-02-22 @ 10:00 am	2016-02-25 @ 9:00 am	4.8 ± 0.6	2016-02-29

March 9, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
MCPS
Phase 9 Office Blanks

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7712568	0	2016-02-22 @ 6:00 pm	2016-02-25 @ 3:00 pm	< 0.3	2016-02-29
7712584	0	2016-02-22 @ 6:00 pm	2016-02-25 @ 3:00 pm	< 0.3	2016-02-29
7719460	0	2016-02-22 @ 6:00 pm	2016-02-25 @ 3:00 pm	< 0.3	2016-02-29
7719481	0	2016-02-22 @ 6:00 pm	2016-02-25 @ 3:00 pm	< 0.3	2016-02-29
7719497	0	2016-02-22 @ 6:00 pm	2016-02-25 @ 3:00 pm	< 0.3	2016-02-29
7719498	0	2016-02-22 @ 6:00 pm	2016-02-25 @ 3:00 pm	< 0.3	2016-02-29

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

March 9, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
MCPS
Phase 9 Office Blanks

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7731626	0	2016-02-23 @ 2:00 pm	2016-02-26 @ 3:00 pm	< 0.3	2016-03-01
7731633	0	2016-02-23 @ 2:00 pm	2016-02-26 @ 3:00 pm	< 0.3	2016-03-01
7735204	0	2016-02-23 @ 2:00 pm	2016-02-26 @ 3:00 pm	< 0.3	2016-03-01

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February 23, 2016
LABORATORY ANALYSIS REPORT

Radon test result report for:
TRANSIT- PHASE 7, 8, 9
NONE

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7734937	1	2016-02-19 @ 3:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734946	10	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734955	11	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734956	12	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734959	13	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734930	14	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734953	15	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734954	16	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734940	17	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734949	18	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734948	19	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734939	2	2016-02-19 @ 3:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734942	20	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734929	21	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734933	22	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734934	23	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734936	24	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734943	25	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734944	26	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734935	27	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734928	28	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734952	29	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734947	3	2016-02-19 @ 3:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734931	30	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734932	31	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7718520	32	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7718523	33	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7718522	34	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7718521	35	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734945	4	2016-02-19 @ 3:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734960	5	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734958	6	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734951	7	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734957	8	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734938	9	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23

February
15,
2016

****LABORATORY ANALYSIS
REPORT ****

Spike Sample Laboratory Results

Radon test result report for:
MCPS

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

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

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCF Technologies Inc. Job Number 173704

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

Date Start: 11/30/16 Date Stop: 2/1/16 Date Start: _____ Date Stop: _____

Time Start: 0926 Time Stop: 0926 Time Start: _____ Time Stop: _____

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

7718281, 7718282, 7718291, _____

7718288, 7718289, 7718273 _____

ε3 Left

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

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

Device No.'s: _____ Device No.'s: _____

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

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

Device No.'s: _____ Device No.'s: _____

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 9

Name of Schools:

- | | | |
|--------------------------|---------------------------|------------------------|
| 1. Rocking Horse Road ES | 16. Broad Acres ES | 31. Rosa Parks MS |
| 2. Rockwell ES | 17. Belmont ES | 32. Rosemary Hills ES |
| 3. Oakland Terrace ES | 18. Emory Grove Center | 33. Sequoyah ES |
| 4. Rosemont ES | 19. Forest Knolls ES | 34. Damascus HS |
| 5. Beall ES | 20. Baker MS | 35. Einstein ES |
| 6. Cresthaven ES | 21. MLK MS | 36. Forest Oak MS |
| 7. Quince Orchard HS | 22. Richard Montgomery HS | 37. Hoover MS |
| 8. Smith Center | 23. Sherwood HS | 38. Julius West MS |
| 9. Ashburton ES | 24. Walter Johnson HS | 39. John F. Kennedy HS |
| 10. Bannockburn ES | 25. Diamond ES | 40. Travilah ES |
| 11. Bradley Hills ES | 26. Newport Mill MS | 41. Watkins Mill HS |
| 12. Cannon Road ES | 27. Drew ES | 42. Northwood HS |
| 13. Flora M. Singer ES | 28. Monocacy ES | 43. Lincoln Center |
| 14. Clarksburg HS | 29. Potomac ES | |
| 15. Briggs Chaney MS | 30. Rock Terrace School | |

	Date	Initials
Radon Test Kits Deployed	2/22/16	JM
Radon Test Kits Collected	2/25/16	JM
Radon Test Kits Shipped to Lab*	2/25/16	JM
Radon Test Kits Received by Lab*	2/29/16	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 9

Name of Schools:

- | | |
|----------------------------|-------------------------|
| 1. Banneker MS | 10. Maryvale ES |
| 2. Bethesda-Chevy Chase HS | 11. Montgomery Blair HS |
| 3. Burtonsville ES | 12. Poolesville HS |
| 4. Chevy Chase ES | 13. Rachel Carson ES |
| 5. Clopper Mill ES | 14. Stedwick ES |
| 6. Edison HS | 15. Watkins Mill ES |
| 7. Flower Hill ES | 16. Laytonsville ES |
| 8. Flower Valley ES | 17. Lincoln Center |
| 9. Greencastle ES | |

	Date	Initials
Radon Test Kits Deployed	2/23/16	JM
Radon Test Kits Collected	2/26/16	JM
Radon Test Kits Shipped to Lab*	2/26/16	JM
Radon Test Kits Received by Lab*	3/01/16	JM

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