KCI TECHNOLOGIES

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

936 RIDGEBROOK ROAD • SPARKS, MD 21152 • 410-316-7800 • (FAX) 410-316-7935

MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Sherwood High School
Date of Test Report	05/31/2022
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	1
# Rooms ≥ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	<0.3 pCi/L

Project Status

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

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May 31, 2022

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

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

Location: Sherwood High School
300 Olney-Sandy Spring Rd.
Sandy Spring, MD 20860

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 Sherwood High School, located at 300 Olney-Sandy Spring Rd. Sandy Spring, MD 20860 (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 April 05, 2022 and deployed three (3) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

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

A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on April 08, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

These tests represent:

- Follow-up to initial testing.

These tests were conducted to:

- Evaluate radon concentrations at the facility.

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the mid 20°Fs and high temperatures ranged from the low 50°Fs to the mid 70°Fs. Maximum sustained winds ranged from 0-33 miles per hour. Average humidity was around 47% with 0.23 inches of precipitation (rain) was recorded during testing period.

Results:

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

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
≥4.0 piC/L	None	N/A
<4.0 piC/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 McCleaf

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
QC- Quality Control

Table 1- Radon Testing Results		
Sherwood HS RT		
Test Period: 04/05/2022 - 04/08/2022		
Kit Number	Room / Area	Result
11139950	H137	< 0.3
11139983	H137	< 0.3
11139997	H137	< 0.3

Table 2- Radon Testing Results			
Sherwood HS RT			
Test Period: 04/05/2022 - 04/08/2022			
Kit Number	QC Type	Room / Area	Result
11139983	D	H137	< 0.3
11139950	FB	H137	< 0.3
11139882	OB	OFFICE BLANK	< 0.3
11139881	TB	TRAVEL BLANK	< 0.3

Summary of Missed Locations		
Sherwood HS RT		
Test Period: 04/05/22 - 04/08/22		
Kit Number	Room/Area	Result
	NA	

Summary of Missing, Compromised and >/= 4 piC/L Tests		
Sherwood HS RT		
Test Period: 04/05/22 - 04/08/22		
Kit Number	Room/Area	Result
	NA	

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

April 12, 2022

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11139950	H137	2022-04-05 @ 11:00 am	2022-04-08 @ 10:00 am	< 0.3	2022-04-12
11139983	H137	2022-04-05 @ 11:00 am	2022-04-08 @ 10:00 am	< 0.3	2022-04-12
11139997	H137	2022-04-05 @ 11:00 am	2022-04-08 @ 10:00 am	< 0.3	2022-04-12

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 204620

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

Date Start: 3/18/22 Date Stop: 3/21/22	Date Start: _____ Date Stop: _____
Time Start: 0705 Time Stop: 0705	Time Start: _____ Time Stop: _____
Device No.'s: (5) Char Bags -	Device No.'s: _____
11139367, 11139368, 11139371,	_____
11139710, 11139717	_____
E3 Eight	_____
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

March 30, 2022

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within ± 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 ± 2.1	2022-03-30
11139368	SK2	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	23.9 ± 2.0	2022-03-30
11139371	SK3	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	25.7 ± 2.1	2022-03-30
11139710	SK4	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	26.4 ± 2.1	2022-03-30
11139717	SK5	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	24.6 ± 2.0	2022-03-30

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Radon Test Kit Chain of Custody

Project Name: MCPS Radon – April 2022 Schools – Retesting

Name of Schools:

1. Gaithersburg MS
2. Julius West MS
3. Sherwood HS

	Date	Initials
Radon Test Kits Deployed	04/05/2022	BMM
Radon Test Kits Collected	04/08/2022	BMM
Radon Test Kits Shipped to Lab*	04/08/2022	BMM
Radon Test Kits Received by Lab*	04/11/2022	BMM

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

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MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Sherwood High School
Date of Test Report	05/12/2022
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	2
# Rooms ≥ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	0.6 pCi/L

Project Status

Current Project Status at this time: Testing completed; missed location needs re-sampling

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May 12, 2022

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

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

Location: Sherwood High School
300 Olney-Sandy Spring Rd.
Sandy Spring, MD 20806

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 Sherwood High School, located at 300 Olney-Sandy Spring Rd. Sandy Spring, MD 20806 (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 22, 2022 and deployed four (4) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

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

A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on March 25, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

These tests represent:

- Follow-up to initial testing.

These tests were conducted to:

- Evaluate radon concentrations at the facility.

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the low 40°Fs and high temperatures ranged from the low 50°Fs to the low 70°Fs. Maximum sustained winds ranged from 0-29 miles per hour. Average humidity was around 56% with 0.51 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 piC/L	None	N/A
<4.0 piC/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 McCleaf

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
QC- Quality Control

Table 1- Radon Testing Results		
Sherwood HS RT		
Test Period: 03/22/2022 - 03/25/2022		
Kit Number	Room / Area	Result
11139917	136	< 0.3
11139918	136	0.6
11139919	136	< 0.3
11139925	156A	< 0.3

Table 2- Radon Testing Results			
Sherwood HS RT			
Test Period: 03/22/2022 - 03/25/2022			
Kit Number	QC Type	Room / Area	Result
11139918	D	136	0.6
11139917	FB	136	< 0.3
11139902	OB	OFFICE BLANK	< 0.3
11139928	TB	TRAVEL BLANK	< 0.3

Summary of Missed Locations		
Sherwood HS RT		
Test Period: 03/22/22 - 03/25/22		
Kit Number	Room/Area	Result
NA	H137	NA

Summary of Missing, Compromised and >/= 4 piC/L Tests		
Sherwood HS RT		
Test Period: 03/22/22 - 03/25/22		
Kit Number	Room/Area	Result
	NA	

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

March 28, 2022

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11139917	136	2022-03-22 @ 3:00 pm	2022-03-25 @ 2:00 pm	< 0.3	2022-03-28
11139918	136	2022-03-22 @ 3:00 pm	2022-03-25 @ 2:00 pm	0.6 ± 0.3	2022-03-28
11139919	136	2022-03-22 @ 3:00 pm	2022-03-25 @ 2:00 pm	< 0.3	2022-03-28
11139925	156A	2022-03-22 @ 3:00 pm	2022-03-25 @ 2:00 pm	< 0.3	2022-03-28

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT 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 Eight	_____
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

March 30, 2022

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within ± 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 ± 2.1	2022-03-30
11139368	SK2	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	23.9 ± 2.0	2022-03-30
11139371	SK3	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	25.7 ± 2.1	2022-03-30
11139710	SK4	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	26.4 ± 2.1	2022-03-30
11139717	SK5	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	24.6 ± 2.0	2022-03-30

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

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Radon Test Kit Chain of Custody

Project Name: MCPS Radon – March 2022 Schools – Retesting

Name of Schools:

1. Herbert Hoover MS
2. Parkland MS
3. Redland MS
4. Rock Creek Valley ES
5. Tilden MS
6. Rockville HS
7. Wootton HS
8. Capt. James E. Daly ES
9. Clarksburg HS
10. Clearspring ES
11. Hallie Wells MS
12. Northwest HS
13. Paint Branch HS
14. Rocky Hills MS
15. Seneca Valley HS
16. Sherwood HS
17. Wilson Wims ES

	Date	Initials
Radon Test Kits Deployed	03/22/2022	BMM
Radon Test Kits Collected	03/25/2022	BMM
Radon Test Kits Shipped to Lab*	03/25/2022	BMM
Radon Test Kits Received by Lab*	03/28/2022	BMM

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

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MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Sherwood High School
Date of Test Report	4/6/2022
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 ≥ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	2.1 pCi/L

Project Status:
Initial testing completed; Missing or compromised kits need re-sampling.

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April 6, 2022

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

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

Location: Sherwood HS
300 Olney-Sandy Spring Rd.
Sandy Spring, MD 20860

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 Sherwood HS, located at 300 Olney-Sandy Spring Rd. Sandy Spring, MD 20860 (subject site).

Scope of Services:

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

KCI visited the site on February 14, 2022 and deployed one hundred forty nine (149) 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 February 17, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc.

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

Evaluation of Testing Conditions:

These tests represent:

- Follow-up to initial testing.

These tests were conducted to:

- Evaluate radon concentration levels at the facility.

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the 20s and high temperatures ranged from the high 30s to the high 40s Fahrenheit. Maximum sustained winds ranged from 5-18 miles per hour. Average humidity was around 15% with 1.5 inches of precipitation (rain) was recorded during testing period.

Results:

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

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
≥4.0 piC/L	None	N/A
<4.0 piC/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 McCleaf

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
QC- Quality Control

Table 1- Radon Testing Results		
Sherwood HS		
Test Period: 02/14/2022 - 02/17/2022		
Kit Number	Room / Area	Result
11114654	101	< 0.3
11114648	103	0.6
11114644	105	< 0.3
11114652	108	0.9
11114653	109	< 0.3
11114650	111	< 0.3
11122530	114	0.9
11122529	115	< 0.3
11122523	116	1.0
11122524	117	< 0.3
11122507	118	0.9
11122513	119	< 0.3
11122516	120	0.8
11122521	120	< 0.3
11122517	122	1.8
11114688	123	< 0.3
11122510	124	0.8
11114691	125	0.8
11114698	125	0.8
11114697	128	< 0.3
11114602	132	0.8
11114694	134	0.5
11114693	135	0.9
11122522	136	NA
11122502	138	< 0.3
11122508	139	< 0.3
11122509	139	< 0.3
11122514	139	< 0.3
11122503	141	< 0.3
11122505	142	0.6
11114687	143	0.5
11114686	144	0.6
11114700	145	< 0.3
11114676	146	< 0.3
11114695	147	< 0.3
11114679	148	0.6
11114677	149	< 0.3
11114678	150	< 0.3
11114667	151	0.6
11114668	151	0.5
11114665	152	< 0.3
11114666	152	0.6

Table 1- Radon Testing Results		
Sherwood HS		
Test Period: 02/14/2022 - 02/17/2022		
Kit Number	Room / Area	Result
11114662	153	< 0.3
11114669	161	< 0.3
11114661	163	< 0.3
11114657	164	< 0.3
11114655	165	< 0.3
11114664	165	< 0.3
11114673	165	< 0.3
11114675	166	< 0.3
11114672	167	< 0.3
11114674	168	< 0.3
11114663	169	< 0.3
11114656	170	< 0.3
11122562	200	0.5
11122565	200	< 0.3
11122572	200	< 0.3
11122573	202	0.8
11122576	203	< 0.3
11122585	204	1.0
11122575	207	0.7
11122586	208	< 0.3
11122584	210	0.9
11122582	211	1.2
11122587	212	< 0.3
11122588	212	0.7
11122589	212	< 0.3
11122583	213	1.3
11122564	220	0.6
11122557	222	1.2
11122558	224	1.0
11122597	229	0.5
11122591	239	< 0.3
11122592	246	< 0.3
11122504	264	< 0.3
11122515	264	< 0.3
11122525	264	< 0.3
11122533	265	< 0.3
11122534	265	< 0.3
11122526	266	< 0.3
11122511	268	< 0.3
11122518	271	< 0.3
11122512	272	< 0.3
11122535	273	< 0.3

Table 1- Radon Testing Results		
Sherwood HS		
Test Period: 02/14/2022 - 02/17/2022		
Kit Number	Room / Area	Result
11122568	274	< 0.3
11122501	276	< 0.3
11122590	276	0.6
11122567	278	< 0.3
11122540	283	< 0.3
11122542	285	< 0.3
11122544	292	< 0.3
11122551	293	< 0.3
11122561	294	< 0.3
11122531	295	< 0.3
11122560	296	< 0.3
11122559	298	< 0.3
11114649	105A	0.6
11114640	110A	2.1
11114651	110A	1.0
11122506	122A	0.9
11114692	123A	< 0.3
11114696	128A	< 0.3
11114685	131 AUDITORIUM	0.6
11114690	131 AUDITORIUM	0.5
11114671	132A	0.5
11114683	132A	0.6
11114684	132A	< 0.3
11114699	135A	< 0.3
11114682	148A	0.7
11114681	149A	< 0.3
11114680	150A	< 0.3
11114670	156A	NA
11114658	158 GYM	1.0
11114659	158 GYM	1.7
11114660	160 WEIGHT ROOM	< 0.3
11122570	200 BREAK ROOM	< 0.3
11122571	200 CONF ROOM	< 0.3
11122563	200 WORK ROOM	< 0.3
11122566	200B	< 0.3
11122574	200B	< 0.3
11122580	200C	< 0.3
11122577	200D	< 0.3
11122578	200E	< 0.3
11122569	200F	< 0.3
11122579	200G	< 0.3
11122581	200H	0.5

Table 1- Radon Testing Results		
Sherwood HS		
Test Period: 02/14/2022 - 02/17/2022		
Kit Number	Room / Area	Result
11122532	265A	< 0.3
11122528	287 CAFETERIA	0.6
11122541	287 CAFETERIA	< 0.3
11122538	287A	< 0.3
11122539	287A	0.6
11122527	287C	0.5
11122519	292A	< 0.3
11122546	292A	< 0.3
11122547	293 CONF ROOM	0.9
11122543	293A	< 0.3
11122545	293B	< 0.3
11122552	293D	< 0.3
11122548	293E	< 0.3
11122549	293F	< 0.3
11122536	293G	< 0.3
11122520	293H	< 0.3
11122550	293I	< 0.3
11122556	293K	< 0.3
11122553	293L	< 0.3
11122554	293L	< 0.3
11122555	293L	0.6
11114646	A107	< 0.3
11114647	K171	< 0.3

Table 2- Radon Testing Results			
Sherwood HS			
Test Period: 02/14/2022 - 02/17/2022			
Kit Number	QC Type	Room / Area	Result
11114666	D	152	0.6
11114664	D	165	< 0.3
11114673	FB	165	< 0.3
11114684	D	132A	< 0.3
11114671	FB	132A	0.5
11114698	D	125	0.8
11122514	D	139	< 0.3
11122508	FB	139	< 0.3
11122521	D	120	< 0.3
11122504	D	265	< 0.3
11122515	FB	264	< 0.3
11122539	D	287A	0.6
11122553	D	293L	< 0.3
11122554	FB	293L	< 0.3
11122519	D	292A	< 0.3
11122562	D	200	0.5
11122572	FB	200	< 0.3
11122574	D	200B	< 0.3
11122588	D	212	0.7
11122589	FB	212	< 0.3
11107385	OB	OFFICE BLANK	< 0.3
11123161	TB	TRAVEL BLANK	< 0.3

Summary of Missed Locations		
Sherwood HS		
Test Period: 02/14/22 - 02/17/22		
Kit Number	Room/Area	Result
NA	H137	NA

Summary of Missing, Compromised and >/= 4 piC/L Tests		
Sherwood HS		
Test Period: 02/14/22 - 02/17/22		
Kit Number	Room/Area	Result
11122522	136	Compromised
11114670	156A	Compromised

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

February 21, 2022

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11114654	101	2022-02-14 @ 10:00 am	2022-02-17 @ 11:00 am	< 0.3	2022-02-21
11114648	103	2022-02-14 @ 10:00 am	2022-02-17 @ 11:00 am	0.6 ± 0.3	2022-02-21
11114644	105	2022-02-14 @ 9:00 am	2022-02-17 @ 9:00 am	< 0.3	2022-02-21
11114649	105A	2022-02-14 @ 9:00 am	2022-02-17 @ 9:00 am	0.6 ± 0.3	2022-02-21
11114652	108	2022-02-14 @ 9:00 am	2022-02-17 @ 9:00 am	0.9 ± 0.3	2022-02-21
11114653	109	2022-02-14 @ 9:00 am	2022-02-17 @ 9:00 am	< 0.3	2022-02-21
11114651	110A	2022-02-14 @ 9:00 am	2022-02-17 @ 9:00 am	1.0 ± 0.3	2022-02-21
11114640	110A	2022-02-14 @ 9:00 am	2022-02-17 @ 9:00 am	2.1 ± 0.4	2022-02-21
11114650	111	2022-02-14 @ 9:00 am	2022-02-17 @ 9:00 am	< 0.3	2022-02-21
11122530	114	2022-02-14 @ 12:00 pm	2022-02-17 @ 9:00 am	0.9 ± 0.3	2022-02-21
11122529	115	2022-02-14 @ 12:00 pm	2022-02-17 @ 9:00 am	< 0.3	2022-02-21
11122523	116	2022-02-14 @ 12:00 pm	2022-02-17 @ 9:00 am	1.0 ± 0.4	2022-02-21
11122524	117	2022-02-14 @ 12:00 pm	2022-02-17 @ 9:00 am	< 0.3	2022-02-21
11122507	118	2022-02-14 @ 12:00 pm	2022-02-17 @ 9:00 am	0.9 ± 0.3	2022-02-21
11122513	119	2022-02-14 @ 1:00 pm	2022-02-17 @ 9:00 am	< 0.3	2022-02-21
11122521	120	2022-02-14 @ 12:00 pm	2022-02-17 @ 9:00 am	< 0.3	2022-02-21
11122516	120	2022-02-14 @ 12:00 pm	2022-02-17 @ 9:00 am	0.8 ± 0.3	2022-02-21
11122517	122	2022-02-14 @ 12:00 pm	2022-02-17 @ 9:00 am	1.8 ± 0.4	2022-02-21
11122506	122A	2022-02-14 @ 1:00 pm	2022-02-17 @ 9:00 am	0.9 ± 0.4	2022-02-21
11114688	123	2022-02-14 @ 11:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114692	123A	2022-02-14 @ 11:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11122510	124	2022-02-14 @ 1:00 pm	2022-02-17 @ 9:00 am	0.8 ± 0.3	2022-02-21
11114691	125	2022-02-14 @ 11:00 am	2022-02-17 @ 11:00 am	0.8 ± 0.3	2022-02-21
11114698	125	2022-02-14 @ 11:00 am	2022-02-17 @ 11:00 am	0.8 ± 0.3	2022-02-21
11114697	128	2022-02-14 @ 11:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114696	128A	2022-02-14 @ 11:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114685	131 AUDITORIUM	2022-02-14 @ 11:00 am	2022-02-17 @ 11:00 am	0.6 ± 0.3	2022-02-21
11114690	131 AUDITORIUM	2022-02-14 @ 11:00 am	2022-02-17 @ 11:00 am	0.5 ± 0.3	2022-02-21
11114602	132	2022-02-14 @ 11:00 am	2022-02-17 @ 10:00 am	0.8 ± 0.3	2022-02-21
11114671	132A	2022-02-14 @ 11:00 am	2022-02-17 @ 10:00 am	0.5 ± 0.3	2022-02-21
11114684	132A	2022-02-14 @ 11:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114683	132A	2022-02-14 @ 11:00 am	2022-02-17 @ 10:00 am	0.6 ± 0.3	2022-02-21
11114694	134	2022-02-14 @ 11:00 am	2022-02-17 @ 11:00 am	0.5 ± 0.3	2022-02-21
11114693	135	2022-02-14 @ 11:00 am	2022-02-17 @ 11:00 am	0.9 ± 0.3	2022-02-21
11114699	135A	2022-02-14 @ 11:00 am	2022-02-17 @ 1:00 pm	< 0.3	2022-02-21
11122522	136	2022-02-14 @ 12:00 pm	2022-02-17 @ 11:00 am	???? IF1	2022-02-21
11122502	138	2022-02-14 @ 12:00 pm	2022-02-17 @ 11:00 am	< 0.3	2022-02-21

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

February 21, 2022 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11122514	139	2022-02-14 @ 12:00 pm	2022-02-17 @ 11:00 am	< 0.3	2022-02-21
11122508	139	2022-02-14 @ 12:00 pm	2022-02-17 @ 11:00 am	< 0.3	2022-02-21
11122509	139	2022-02-14 @ 12:00 pm	2022-02-17 @ 11:00 am	< 0.3	2022-02-21
11122503	141	2022-02-14 @ 12:00 pm	2022-02-17 @ 11:00 am	< 0.3	2022-02-21
11122505	142	2022-02-14 @ 12:00 pm	2022-02-17 @ 11:00 am	0.6 ± 0.3	2022-02-21
11114687	143	2022-02-14 @ 12:00 pm	2022-02-17 @ 11:00 am	0.5 ± 0.3	2022-02-21
11114686	144	2022-02-14 @ 12:00 pm	2022-02-17 @ 11:00 am	0.6 ± 0.3	2022-02-21
11114700	145	2022-02-14 @ 12:00 pm	2022-02-17 @ 11:00 am	< 0.3	2022-02-21
11114676	146	2022-02-14 @ 10:00 am	2022-02-17 @ 11:00 am	< 0.3	2022-02-21
11114695	147	2022-02-14 @ 12:00 pm	2022-02-17 @ 11:00 am	< 0.3	2022-02-21
11114679	148	2022-02-14 @ 10:00 am	2022-02-17 @ 10:00 am	0.6 ± 0.3	2022-02-21
11114682	148A	2022-02-14 @ 10:00 am	2022-02-17 @ 10:00 am	0.7 ± 0.3	2022-02-21
11114677	149	2022-02-14 @ 11:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114681	149A	2022-02-14 @ 11:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114678	150	2022-02-14 @ 11:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114680	150A	2022-02-14 @ 11:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114667	151	2022-02-14 @ 10:00 am	2022-02-17 @ 10:00 am	0.6 ± 0.3	2022-02-21
11114668	151	2022-02-14 @ 10:00 am	2022-02-17 @ 10:00 am	0.5 ± 0.3	2022-02-21
11114665	152	2022-02-14 @ 9:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114666	152	2022-02-14 @ 9:00 am	2022-02-17 @ 10:00 am	0.6 ± 0.3	2022-02-21
11114662	153	2022-02-14 @ 9:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114670	156A	2022-02-14 @ 9:00 am	2022-02-17 @ 10:00 am	???? IA1	2022-02-21
11114659	158 GYM	2022-02-14 @ 10:00 am	2022-02-17 @ 10:00 am	1.7 ± 0.3	2022-02-21
11114658	158 GYM	2022-02-14 @ 10:00 am	2022-02-17 @ 10:00 am	1.0 ± 0.3	2022-02-21
11114660	160 WEIGHT ROOM	2022-02-14 @ 9:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114669	161	2022-02-14 @ 9:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114661	163	2022-02-14 @ 9:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114657	164	2022-02-14 @ 10:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114664	165	2022-02-14 @ 10:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114655	165	2022-02-14 @ 10:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114673	165	2022-02-14 @ 10:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114675	166	2022-02-14 @ 10:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114672	167	2022-02-14 @ 10:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114674	168	2022-02-14 @ 10:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114663	169	2022-02-14 @ 10:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11114656	170	2022-02-14 @ 10:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21
11122572	200	2022-02-14 @ 4:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21

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February 21, 2022 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11122562	200	2022-02-14 @ 4:00 pm	2022-02-17 @ 12:00 pm	0.5 ± 0.3	2022-02-21
11122565	200	2022-02-14 @ 4:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122570	200 BREAK ROOM	2022-02-14 @ 4:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122571	200 CONF ROOM	2022-02-14 @ 4:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122563	200 WORK ROOM	2022-02-14 @ 4:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122574	200B	2022-02-14 @ 4:00 pm	2022-02-17 @ 9:00 am	< 0.3	2022-02-21
11122566	200B	2022-02-14 @ 4:00 pm	2022-02-17 @ 9:00 am	< 0.3	2022-02-21
11122580	200C	2022-02-14 @ 5:00 pm	2022-02-17 @ 9:00 am	< 0.3	2022-02-21
11122577	200D	2022-02-14 @ 4:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122578	200E	2022-02-14 @ 4:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122569	200F	2022-02-14 @ 4:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122579	200G	2022-02-14 @ 4:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122581	200H	2022-02-14 @ 4:00 pm	2022-02-17 @ 12:00 pm	0.5 ± 0.3	2022-02-21
11122573	202	2022-02-14 @ 4:00 pm	2022-02-17 @ 1:00 pm	0.8 ± 0.3	2022-02-21
11122576	203	2022-02-14 @ 4:00 pm	2022-02-17 @ 1:00 pm	< 0.3	2022-02-21
11122585	204	2022-02-14 @ 4:00 pm	2022-02-17 @ 1:00 pm	1.0 ± 0.3	2022-02-21
11122575	207	2022-02-14 @ 4:00 pm	2022-02-17 @ 1:00 pm	0.7 ± 0.3	2022-02-21
11122586	208	2022-02-14 @ 4:00 pm	2022-02-17 @ 1:00 pm	< 0.3	2022-02-21
11122584	210	2022-02-14 @ 5:00 pm	2022-02-17 @ 1:00 pm	0.9 ± 0.3	2022-02-21
11122582	211	2022-02-14 @ 4:00 pm	2022-02-17 @ 1:00 pm	1.2 ± 0.3	2022-02-21
11122588	212	2022-02-14 @ 4:00 pm	2022-02-17 @ 1:00 pm	0.7 ± 0.3	2022-02-21
11122587	212	2022-02-14 @ 4:00 pm	2022-02-17 @ 1:00 pm	< 0.3	2022-02-21
11122589	212	2022-02-14 @ 4:00 pm	2022-02-17 @ 1:00 pm	< 0.3	2022-02-21
11122583	213	2022-02-14 @ 4:00 pm	2022-02-17 @ 1:00 pm	1.3 ± 0.3	2022-02-21
11122564	220	2022-02-14 @ 3:00 pm	2022-02-17 @ 1:00 pm	0.6 ± 0.3	2022-02-21
11122557	222	2022-02-14 @ 3:00 pm	2022-02-17 @ 1:00 pm	1.2 ± 0.3	2022-02-21
11122558	224	2022-02-14 @ 3:00 pm	2022-02-17 @ 1:00 pm	1.0 ± 0.3	2022-02-21
11122597	229	2022-02-14 @ 5:00 pm	2022-02-17 @ 1:00 pm	0.5 ± 0.3	2022-02-21
11122591	239	2022-02-14 @ 5:00 pm	2022-02-17 @ 1:00 pm	< 0.3	2022-02-21
11122592	246	2022-02-14 @ 5:00 pm	2022-02-17 @ 1:00 pm	< 0.3	2022-02-21
11122525	264	2022-02-14 @ 1:00 pm	2022-02-17 @ 1:00 pm	< 0.3	2022-02-21
11122515	264	2022-02-14 @ 1:00 pm	2022-02-17 @ 1:00 pm	< 0.3	2022-02-21
11122504	264	2022-02-14 @ 1:00 pm	2022-02-17 @ 1:00 pm	< 0.3	2022-02-21
11122533	265	2022-02-14 @ 1:00 pm	2022-02-17 @ 1:00 pm	< 0.3	2022-02-21
11122534	265	2022-02-14 @ 1:00 pm	2022-02-17 @ 1:00 pm	< 0.3	2022-02-21
11122532	265A	2022-02-14 @ 1:00 pm	2022-02-17 @ 1:00 pm	< 0.3	2022-02-21
11122526	266	2022-02-14 @ 1:00 pm	2022-02-17 @ 1:00 pm	< 0.3	2022-02-21

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

February 21, 2022

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11122511	268	2022-02-14 @ 1:00 pm	2022-02-17 @ 1:00 pm	< 0.3	2022-02-21
11122518	271	2022-02-14 @ 1:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122512	272	2022-02-14 @ 1:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122535	273	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122568	274	2022-02-14 @ 4:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122501	276	2022-02-14 @ 5:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122590	276	2022-02-14 @ 5:00 pm	2022-02-17 @ 12:00 pm	0.6 ± 0.3	2022-02-21
11122567	278	2022-02-14 @ 4:00 pm	2022-02-17 @ 11:00 am	< 0.3	2022-02-21
11122540	283	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122542	285	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122541	287 CAFETERIA	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122528	287 CAFETERIA	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	0.6 ± 0.3	2022-02-21
11122539	287A	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	0.6 ± 0.3	2022-02-21
11122538	287A	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122527	287C	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	0.5 ± 0.3	2022-02-21
11122544	292	2022-02-14 @ 3:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122546	292A	2022-02-14 @ 3:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122519	292A	2022-02-14 @ 3:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122551	293	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122547	293 CONF ROOM	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	0.9 ± 0.3	2022-02-21
11122543	293A	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122545	293B	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122552	293D	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122548	293E	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122549	293F	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122536	293G	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122520	293H	2022-02-14 @ 3:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122550	293I	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122556	293K	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122555	293L	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	0.6 ± 0.3	2022-02-21
11122553	293L	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122554	293L	2022-02-14 @ 2:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122561	294	2022-02-14 @ 3:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122531	295	2022-02-14 @ 1:00 pm	2022-02-17 @ 1:00 pm	< 0.3	2022-02-21
11122560	296	2022-02-14 @ 3:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11122559	298	2022-02-14 @ 3:00 pm	2022-02-17 @ 12:00 pm	< 0.3	2022-02-21
11114646	A107	2022-02-14 @ 9:00 am	2022-02-17 @ 9:00 am	< 0.3	2022-02-21

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

February 21, 2022

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11114647	K171	2022-02-14 @ 10:00 am	2022-02-17 @ 10:00 am	< 0.3	2022-02-21

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EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 204186

NOMINAL Conditions: Radon Conc 25.8 pCi/L Rel. Hum 59.1 % Temp. 70.9 F

Date Start: 2/18/22 Date Stop: 2/21/22	Date Start: _____ Date Stop: _____
Time Start: 0911 Time Stop: 0911	Time Start: _____ Time Stop: _____
Device No.'s: (3) Char Bags - 11113484, 11192998, 20107126	Device No.'s: _____
23 Right	
Date Start: _____ Date Stop: _____	Date Start: _____ Date Stop: _____
Time Start: _____ Time Stop: _____	Time Start: _____ Time Stop: _____
Device No.'s: _____	Device No.'s: _____
Date Start: _____ Date Stop: _____	Date Start: _____ Date Stop: _____
Time Start: _____ Time Stop: _____	Time Start: _____ Time Stop: _____
Device No.'s: _____	Device No.'s: _____

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

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

Kit Number	Start Date	Start Time	End Date	End Time	Temp.	Facility	Building	Room	Project ID	Floor	Result
11113484	2022-02-18	9:00 am	2022-02-21	9:00 am	71	OFFICE	MAIN	SK1		1	27.9
11122998	2022-02-18	9:00 am	2022-02-21	9:00 am	71	OFFICE	MAIN	SK2		1	26.0
20107126	2022-02-18	9:00 am	2022-02-21	9:00 am	71	OFFICE	MAIN	SK3		1	27.6

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KCI TECHNOLOGIES

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

Radon Test Kit Chain of Custody

Project Name: MCPS Radon – February 2022 Schools

Name of Schools:

1. Sherwood HS
2. Paint Branch HS
3. Clarksburg HS
4. Hallie Wells MS
5. Rocky Hill MS
6. Wilson Wims ES
7. John T. Baker MS
8. Clearspring ES
9. Damascus ES

	Date	Initials
Radon Test Kits Deployed	02/14/2022	
Radon Test Kits Collected	02/17/2022	
Radon Test Kits Shipped to Lab*	02/17/2022	
Radon Test Kits Received by Lab*	02/19/2022	

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

RADON SCREENING SURVEY – FOLLOW-UP SHERWOOD HIGH SCHOOL

300 Olney-Sandy Spring Road, Sandy Spring, Maryland 20860

EXECUTIVE SUMMARY

Date of Test Report:	3/14/16 Follow-Up
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	6
# Rooms ≥ 4.0 pCi/L:	0
Low Value:	<0.3
High Value:	0.7
Confirmed Rooms ≥ 4.0 pCi/L US EPA Action Level	0

Summary of Sampling Events ≥ 4.0 pCi/L

Room	Result (pCi/L) 3/4/16 (Rev 1 Initial)	Result (pCi/L) 3/14/16 Follow-Up	Average Result (pCi/L)
123	<0.3 Tampered	--- Missing	<0.3
125A	--- Missing	0.7	0.7
131	0.8 Tampered	0.6	0.7
131	0.7 Tampered	0.5	0.6
131	1.0 Tampered	0.6	0.8
131A	0.7 Tampered	<0.3	0.5
150B	0.8 Tampered	0.6	0.7
123 (D)	<0.3 Tampered	Not sampled	<0.3
131 (D)	0.5 Tampered	0.6 Tampered	0.6
123A	<0.3	<0.3	<0.3

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MCPS RADON TESTING

Executive Summary: Sherwood High School

Date of Test Report:	3/14/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	6
# Rooms ≥ 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	0.7

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

KCI TECHNOLOGIES

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March 14, 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: Sherwood High School
300 Olney-Sandy Spring Road
Sandy Spring, MD 20860

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 Sherwood High School, located at 300 Olney-Sandy Spring Road in Sandy Spring, Maryland 20860 (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 twelve (12) 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 ≤ 65° 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. Note that strong storms and heavy rainfall were recorded during the test period. The unusual weather conditions may have resulted in atypical radon test results for this facility.

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

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

Results:

The results of the radon test analysis indicated the following:

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

Notes:
D- Duplicate sample

The field blank, office blanks, and lab transit blanks had test results of less than the laboratory detection limit of 0.3 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. Moulsdale
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		
Sherwood High School		
Test Period: 02/22/16-02/25/16		
Kit Number	**Room / Area**	**Result**
7721405	131	0.6
7721426	131	0.5
7726705	131	0.6
7721425	* 123 (Missing)	-
7729790	123A	< 0.3
7729792	125A	0.7
7721406	* 131 (Tampered)	0.6
7721439	* 131 (Tampered)	0.6
7717300	131A	< 0.3
7721433	150B	0.6

Table Note:
* Missing or Compromised Sample

Radon Testing Results		
Sherwood High School		
Test Period: 02/22/16-02/25/16		
Kit Number	**QC Type**	**Result**
7721407	D (123A)	< 0.3
7721424	FB (1424)	< 0.3

Table Note:
* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

March 8, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

SHERWOOD HIGH SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7721425	123	@	@		
7721407	123A	2016-02-22 @ 10:00 am	2016-02-25 @ 10:00 am	< 0.3	2016-02-29
7729790	123A	2016-02-22 @ 10:00 am	2016-02-25 @ 10:00 am	< 0.3	2016-02-29
7729792	125A	2016-02-22 @ 10:00 am	2016-02-25 @ 10:00 am	0.7 ± 0.3	2016-02-29
7721405	131	2016-02-22 @ 10:00 am	2016-02-25 @ 11:00 am	0.6 ± 0.3	2016-02-29
7721426	131	2016-02-22 @ 10:00 am	2016-02-25 @ 11:00 am	0.5 ± 0.3	2016-02-29
7721439	131	2016-02-22 @ 10:00 am	2016-02-25 @ 11:00 am	0.6 ± 0.3	2016-02-29
7726705	131	2016-02-22 @ 10:00 am	2016-02-25 @ 11:00 am	0.6 ± 0.3	2016-02-29
7717300	131A	2016-02-22 @ 10:00 am	2016-02-25 @ 11:00 am	< 0.3	2016-02-29
7721406	131	2016-02-22 @ 10:00 am	2016-02-25 @ 11:00 am	0.6 ± 0.3	2016-02-29
7721424	1424	2016-02-22 @ 10:00 am	2016-02-25 @ 10:00 am	< 0.3	2016-02-29
7721433	150B	2016-02-22 @ 10:00 am	2016-02-25 @ 10:00 am	0.6 ± 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
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

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

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

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

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: 1/30/16 Date Stop: 2/1/16	Date Start: _____ Date Stop: _____
Time Start: 0926 Time Stop: 0926	Time Start: _____ Time Stop: _____
Device No.'s: (6) Char. Bags -	Device No.'s: _____
7718281, 7718282, 7718291,	_____
7718288, 7718289, 7718273	_____
E3 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

KCI TECHNOLOGIES

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 9

Name of Schools:

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

	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

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Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 9

Name of Schools:

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

	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

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MCPS RADON TESTING

Executive Summary: Sherwood High School

Date of Test Report:	3/4/2016 (Rev 1)
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	118
# Rooms ≥ 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	2.3

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

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March 4, 2016 (Rev 1)

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

Re: **Radon Testing Services**
KCI Job # 12146341.20

Location: Sherwood High School
300 Olney-Sandy Spring Road
Sandy Spring, MD 20860

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 Sherwood High School, located at 300 Olney-Sandy Spring Road in Rockville, Maryland 20852 (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 December 21, 2015 and deployed one hundred fifty (150) 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 December 24, 2015 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 ≤ 65° F.

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

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

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

Results:

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
≥4.0 piC/L	None	n/a
<4.0 piC/L	See Attachment B	

Notes:
D- Duplicate sample

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

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

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

Sincerely,

James M. Moulsdale
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

Radon Testing Results		
Sherwood High School		
Test Period: 12/21/15-12/24/15		
Kit Number	**Room / Area**	**Result**
7711905	101	0.6
7711901	102	< 0.3
7711903	103	0.6
7711915	105	< 0.3
7713272	107	< 0.3
7711913	108	1.1
7713273	109	< 0.3
7711919	110	1.4
7711924	111	0.7
7711927	114	1.6
7711914	115	< 0.3
7711928	116	1.5
7711917	117	< 0.3
7711918	118	1.2
7711922	119	0.7
7713275	120	0.7
7713285	121	< 0.3
7711921	122	1.8
7711930	124	1.0
7711934	124	< 0.3
7711935	124	1.1
7713221	125	0.7
7711933	128	< 0.3
7713294	130	0.7
7713284	132	1.2
7713296	134	0.6
7713231	135	0.7
7711961	136	< 0.3
7711965	137	0.6
7711964	139	< 0.3
7711969	141	< 0.3
7711975	142	0.8
7711971	143	0.6
7711979	144	< 0.3
7711973	145	< 0.3
7713274	146	0.7
7711978	147	< 0.3
7713280	148	0.7
7713283	149	< 0.3
7713281	150	0.8
7711912	152	0.7
7713271	153	0.8
7713263	158	1.1
7713265	158	1.0
7713266	158	1.6
7713268	158	1.3

Table Note:
* Missing or Compromised Sample

Radon Testing Results		
Sherwood High School		
Test Period: 12/21/15-12/24/15		
Kit Number	**Room / Area**	**Result**
7713267	158	0.9
7713270	160	< 0.3
7713264	161	0.9
7713295	163	< 0.3
7713293	164	0.8
7711923	165	0.7
7711910	166	0.5
7713292	167	0.7
7711906	168	< 0.3
7711909	169	< 0.3
7711904	170	< 0.3
7711911	171	0.8
7711996	200	< 0.3
7711943	201	< 0.3
7711941	202	1.3
7711937	203	0.6
7711940	204	0.9
7711944	205	1.1
7711962	206	0.7
7711948	207	1.0
7711989	208	0.6
7711995	210	0.7
7711947	211	1.5
7711953	212	< 0.3
7711942	213	1.0
7711959	214	0.8
7711957	216	< 0.3
7711955	218	< 0.3
7711939	220	0.5
7711949	222	1.4
7711950	224	0.7
7711956	228	< 0.3
7711958	242	< 0.3
7713228	250	< 0.3
7711963	255	< 0.3
7711981	267	< 0.3
7711983	267	0.5
7711986	267	0.6
7711987	267	0.8
7711992	267	0.6
7711968	285	1.4
7711907	296	< 0.3
7711920	110A	2.3
7713276	122A	0.7
7711929	* 123 (tampered)	< 0.3
7713287	123A	< 0.3
7713227	* 125A (missing)	-
7713225	125B	0.6
7713288	128A	0.6
7713235	131	0.7

Table Note:
* Missing or Compromised Sample

Radon Testing Results		
Sherwood High School		
Test Period: 12/21/15-12/24/15		
Kit Number	**Room / Area**	**Result**
7713298	131	2.0
7713233	* 131 (tampered)	0.8
7713234	* 131 (tampered)	0.7
7713239	* 131 (tampered)	1.0
7713297	* 131A (tampered)	0.7
7713232	131E	0.9
7713299	132A	0.9
7711966	138H	< 0.3
7713279	148A	0.9
7713286	148B	1.2
7713277	148PRAC	0.7
7713289	149A	< 0.3
7713282	150A	0.8
7713290	* 150B (tampered)	0.8
7711925	151A	< 0.3
7711926	151B	< 0.3
7711932	151C	< 0.3
7711988	200A	< 0.3
7711985	200B	< 0.3
7711994	200C	< 0.3
7711976	200D	< 0.3
7712000	200E	< 0.3
7711993	200F	0.6
7711972	200G	0.6
7711938	200H	< 0.3
7711951	202A	1.0
7711984	203B	1.1
7711945	207A	1.0
7711991	208A	1.0
7711952	210A	0.6
7711946	211A	0.8
7711954	218A	< 0.3
7711982	283A	1.2
7711977	287A	< 0.3
7711998	BREAK ROOM	0.7
7711936	CONFERENCE	0.6
7711997	COPY ROOM	< 0.3

Table Note:
* Missing or Compromised Sample

Radon Testing Results		
Sherwood High School		
Test Period: 12/21/15-12/24/15		
Kit Number	**QC Type**	**Result**
7711902	D (103)	< 0.3
7711931	D (116)	1.1
7713291	* D (123:tampered)	< 0.3
7713300	* D (131:tampered)	0.5
7711999	D (136)	< 0.3
7711974	D (145)	< 0.3
7713278	D (148)	0.6
7713269	D (158)	1.1
7711980	D (200D)	< 0.3
7711970	D (207)	0.9
7711960	D (218)	< 0.3
7711916	FB (117)	< 0.3
7711967	FB (143)	< 0.3
7711908	FB (169)	< 0.3
7711990	FB (200)	< 0.3
7710306	OB (0)	< 0.3
7710307	OB (0)	< 0.3

Table Note:
* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

January 12, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

SHERWOOD HIGH SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7711948	207	2015-12-21 @ 12:00 pm	2015-12-24 @ 12:00 pm	1.0 ± 0.3	2015-12-28
7710306	0	2015-12-21 @ 5:00 pm	2015-12-24 @ 1:00 pm	< 0.3	2015-12-28
7710307	00	2015-12-21 @ 5:00 pm	2015-12-24 @ 1:00 pm	< 0.3	2015-12-28
7711905	101	2015-12-21 @ 12:00 pm	2015-12-24 @ 10:00 am	0.6 ± 0.3	2015-12-28
7711901	102	2015-12-21 @ 12:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-28
7711902	103	2015-12-21 @ 12:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-28
7711903	103	2015-12-21 @ 12:00 pm	2015-12-24 @ 10:00 am	0.6 ± 0.3	2015-12-28
7711915	105	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-28
7713272	107	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-28
7711913	108	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	1.1 ± 0.3	2015-12-28
7713273	109	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-28
7711920	110A	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	2.3 ± 0.4	2015-12-28
7711919	110	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	1.4 ± 0.4	2015-12-29
7711924	111	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	0.7 ± 0.3	2015-12-28
7711927	114	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	1.6 ± 0.3	2015-12-28
7711914	115	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-28
7711928	116	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	1.5 ± 0.3	2015-12-28
7711931	116	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	1.1 ± 0.3	2015-12-28
7711916	117	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-28
7711917	117	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-28
7711918	118	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	1.2 ± 0.3	2015-12-28
7711922	119	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	0.7 ± 0.3	2015-12-28
7713275	120	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	0.7 ± 0.3	2015-12-28
7713285	121	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7711921	122	2015-12-21 @ 2:00 pm	2015-12-24 @ 2:00 pm	1.8 ± 0.3	2015-12-28
7713276	122A	2015-12-21 @ 2:00 pm	2015-12-24 @ 2:00 pm	0.7 ± 0.3	2015-12-28
7711929	123	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7713291	123	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7713287	123A	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7711930	124	2015-12-21 @ 2:00 pm	2015-12-24 @ 10:00 am	1.0 ± 0.3	2015-12-28
7711934	124	2015-12-21 @ 2:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-28
7711935	124	2015-12-21 @ 2:00 pm	2015-12-24 @ 10:00 am	1.1 ± 0.3	2015-12-29
7713221	125	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	0.7 ± 0.3	2015-12-28
7713227	125A	@	@		
7713225	125B	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	0.6 ± 0.3	2015-12-28
7711933	128	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7713288	128A	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	0.6 ± 0.3	2015-12-28

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

January 12, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

SHERWOOD HIGH SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7713294	130	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	0.7 ± 0.3	2015-12-28
7713298	131	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	2.0 ± 0.3	2015-12-28
7713300	131	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.5 ± 0.3	2015-12-28
7713233	131	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	0.8 ± 0.3	2015-12-28
7713234	131	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	0.7 ± 0.3	2015-12-28
7713235	131	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	0.7 ± 0.3	2015-12-28
7713239	131	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	1.0 ± 0.3	2015-12-28
7713297	131A	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.7 ± 0.3	2015-12-29
7713232	131E	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	0.9 ± 0.3	2015-12-28
7713284	132	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	1.2 ± 0.3	2015-12-28
7713299	132A	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	0.9 ± 0.3	2015-12-28
7713296	134	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	0.6 ± 0.3	2015-12-28
7713231	135	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	0.7 ± 0.3	2015-12-28
7711961	136	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7711999	136	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7711965	137	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.6 ± 0.3	2015-12-28
7711966	138H	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7711964	139	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7711969	141	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7711975	142	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.8 ± 0.3	2015-12-28
7711967	143	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7711971	143	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.6 ± 0.3	2015-12-29
7711979	144	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7711973	145	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7711974	145	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7713274	146	2015-12-21 @ 2:00 pm	2015-12-24 @ 10:00 am	0.7 ± 0.3	2015-12-28
7711978	147	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7713278	148	2015-12-21 @ 2:00 pm	2015-12-24 @ 10:00 am	0.6 ± 0.3	2015-12-28
7713280	148	2015-12-21 @ 2:00 pm	2015-12-24 @ 10:00 am	0.7 ± 0.3	2015-12-28
7713279	148A	2015-12-21 @ 2:00 pm	2015-12-24 @ 10:00 am	0.9 ± 0.3	2015-12-28
7713286	148B	2015-12-21 @ 2:00 pm	2015-12-24 @ 10:00 am	1.2 ± 0.3	2015-12-28
7713277	148PRAC	2015-12-21 @ 2:00 pm	2015-12-24 @ 10:00 am	0.7 ± 0.3	2015-12-28
7713283	149	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7713289	149A	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7713281	150	2015-12-21 @ 2:00 pm	2015-12-24 @ 2:00 pm	0.8 ± 0.3	2015-12-28
7713282	150A	2015-12-21 @ 2:00 pm	2015-12-24 @ 10:00 am	0.8 ± 0.3	2015-12-28
7713290	150B	2015-12-21 @ 2:00 pm	2015-12-24 @ 10:00 am	0.8 ± 0.3	2015-12-29

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

January 12, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

SHERWOOD HIGH SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7711925	151A	2015-12-21 @ 2:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-28
7711926	151B	2015-12-21 @ 2:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-28
7711932	151C	2015-12-21 @ 2:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-28
7711912	152	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	0.7 ± 0.3	2015-12-28
7713271	153	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	0.8 ± 0.3	2015-12-28
7713263	158	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	1.1 ± 0.3	2015-12-28
7713265	158	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	1.0 ± 0.3	2015-12-28
7713266	158	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	1.6 ± 0.3	2015-12-28
7713268	158	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	1.3 ± 0.3	2015-12-28
7713269	158	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	1.1 ± 0.3	2015-12-28
7713270	160	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-28
7713264	161	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	0.9 ± 0.3	2015-12-28
7713295	163	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-28
7713293	164	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	0.8 ± 0.3	2015-12-28
7711923	165	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	0.7 ± 0.3	2015-12-28
7711910	166	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	0.5 ± 0.3	2015-12-28
7713292	167	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	0.7 ± 0.3	2015-12-28
7711906	168	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-29
7711908	169	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-28
7711909	169	2015-12-21 @ 1:00 pm	2015-12-24 @ 2:00 pm	< 0.3	2015-12-28
7711904	170	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-28
7711911	171	2015-12-21 @ 1:00 pm	2015-12-24 @ 10:00 am	0.8 ± 0.3	2015-12-28
7711936	CONFERENCE	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	0.6 ± 0.3	2015-12-28
7711990	200	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-28
7711996	200	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-28
7711997	COPY ROOM	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-28
7711998	BREAK ROOM	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	0.7 ± 0.3	2015-12-28
7711988	200A	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-28
7711985	200B	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-29
7711994	200C	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-28
7711976	200D	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-28
7711980	200D	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-28
7712000	200E	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-28
7711993	200F	2015-12-21 @ 3:00 pm	2015-12-24 @ 12:00 pm	0.6 ± 0.3	2015-12-28
7711972	200G	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	0.6 ± 0.3	2015-12-28
7711938	200H	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-28
7711943	201	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-28

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

January 12, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

SHERWOOD HIGH SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7711941	202	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	1.3 ± 0.3	2015-12-28
7711951	202A	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	1.0 ± 0.3	2015-12-28
7711937	203	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	0.6 ± 0.3	2015-12-28
7711984	203B	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	1.1 ± 0.3	2015-12-29
7711940	204	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	0.9 ± 0.3	2015-12-28
7711944	205	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	1.1 ± 0.4	2015-12-29
7711970	207	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	0.9 ± 0.3	2015-12-29
7711945	207A	2015-12-21 @ 4:00 pm	2015-12-24 @ 2:00 pm	1.0 ± 0.3	2015-12-28
7711989	208	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	0.6 ± 0.3	2015-12-28
7711962	206	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	0.7 ± 0.3	2015-12-29
7711991	208A	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	1.0 ± 0.3	2015-12-28
7711995	210	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	0.7 ± 0.3	2015-12-28
7711952	210A	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	0.6 ± 0.3	2015-12-28
7711947	211	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	1.5 ± 0.4	2015-12-29
7711946	211A	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	0.8 ± 0.3	2015-12-29
7711953	212	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-28
7711942	213	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	1.0 ± 0.3	2015-12-29
7711959	214	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	0.8 ± 0.3	2015-12-28
7711957	216	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-29
7711955	218	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-28
7711960	218	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-29
7711954	218A	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-29
7711939	220	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	0.5 ± 0.3	2015-12-28
7711949	222	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	1.4 ± 0.3	2015-12-28
7711950	224	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	0.7 ± 0.3	2015-12-28
7711956	228	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-28
7711958	242	2015-12-21 @ 4:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-28
7713228	250	2015-12-21 @ 5:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-28
7711963	255	2015-12-21 @ 5:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-29
7711981	267	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7711986	267	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.6 ± 0.3	2015-12-28
7711987	267	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.8 ± 0.3	2015-12-28
7711992	267	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.6 ± 0.3	2015-12-28
7711983	267	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.5 ± 0.3	2015-12-29
7711982	283A	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	1.2 ± 0.3	2015-12-28
7711968	285	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	1.4 ± 0.3	2015-12-28
7711977	287A	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29

January 12, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

SHERWOOD HIGH SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7711907	296	2015-12-21 @ 5:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-28
7713267	158	2015-12-21 @ 1:00 pm	2015-12-24 @ 2:00 pm	0.9 ± 0.3	2015-12-28

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

December 29, 2015

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

TRANSIT DEC 14 2015
NONE

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7704395	TRANSIT 1	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706508	TRANSIT 10	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706510	TRANSIT 11	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706511	TRANSIT 12	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706505	TRANSIT 13	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704371	TRANSIT 14	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706506	TRANSIT 15	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704381	TRANSIT 16	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704399	TRANSIT 17	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704390	TRANSIT 18	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704396	TRANSIT 2	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704364	TRANSIT 3	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704370	TRANSIT 4	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704368	TRANSIT 5	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706524	TRANSIT 6	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706526	TRANSIT 7	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706518	TRANSIT 8	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706516	TRANSIT 9	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16

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December 23, 2015

** LABORATORY ANALYSIS REPORT **

Spike Sample Laboratory Results

Radon test result report for:

MCPS

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

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 173224

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

Date Start: 12/18/15 Date Stop: 12/21/15	Date Start: _____ Date Stop: _____
Time Start: 0929 Time Stop: 0929	Time Start: _____ Time Stop: _____
Device No.'s: 7705132, 7706208, 7706211, 7706366, 7706380, 7706381 F3 Left	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: _____
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

KCI TECHNOLOGIES

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

Chain of Custody

Project Name: MCPS Radon Phase II

School Names:

1. Bannonckburn ES
2. Walt Whitman HS
3. Walter Johnson HS
4. North Chevy Chase ES
5. Piney Branch ES
6. Forest Knolls ES
7. Newport Mill MS
8. Broad Acres ES
9. Briggs Chaney MS
10. Blair G. Ewing Center
11. Sherwood HS
12. Hadley Farms
13. S. Christa McAuliffe ES
14. Ronald A. McNair ES
15. MLK MS
16. Ashburton ES
17. Bradley Hills ES
18. Flora M. Singer ES
19. Woodlin ES
20. Montgomery Knolls ES
21. Fairland ES
22. Cannon Road ES
23. Richard Montgomery HS
24. Brooke Grove ES
25. Belmont ES
26. Emory Grove
27. Clarksburg HS
28. Clarksburg ES
29. John T. Baker MS

	Date	Initials
Radon Test Kits Deployed	12/21/2015	
Radon Test Kits Collected	12/24/2015	
Radon Test Kits Shipped to Lab*	12/24/2015	
Radon Test Kits Received by Lab*	12/28/2015	

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