MCPS DEM SUSTAINABILITY & COMPLIANCE

School / Facility Radon Testing Report Form

School Year: **24-25**

Facility:	Belmont Elementary School
Address:	19528 Olney Mill Road
	Olney, MD 20832
Reason for Testing:	Scheduled Re-Testing - ☐ 2-year or ☒ 5-year schedule ☐ Clearance Testing (Post-Mitigation) ☒ Building Envelope or HVAC Upgrades ☐ New Construction – Addition or Facility
Current Radon Status:	☐ Active Mitigation (2-year regular schedule) ☒ No Active Mitigation (5-year regular schedule) ☐ Not Previously Tested (New Facility)
Round of Testing:	☐ Initial Testing **-or-** ☒ Follow-up Testing
Testing Status:	☒ No Further Testing Needed **-or-** ☐ Follow-Up Testing Required

Conclusion (When Testing Status is - No Further Testing Needed)

Mitigation -	**Facility Radon Status:**		
☐ Not Required ☒ Consider (≥2.0 & <4.0-pCi/L) ☐ Required (≥4.0-pCi/L) Rooms:	☒ No Change in Status ☐ Active Mitigation (2-year regular schedule) ☐ No Active Mitigation (5-year regular schedule)		
Number of Rooms Tested	43	Lowest Value (pCi/L)	< 0.3
Number of Rooms (≥4.0-pCi/L)	2	Highest Value (pCi/L)	5.4

Instructions: Submit one testing report form per-facility. Include the following as attachments:

Attachment 1- Summary Data Tables – containing the following: (see attached samples tables)

- Testing Results – lab/detector Identification, by room number/name (alpha-numeric order) as depicted on facility map/floor plan provided by the facility/school at the time of test device deployment;
- Summary Results – list of rooms by test result ≥2.0-pCi/L; ≥2.7-pCi/L; ≥4.0-pCi/L; and ≥8.0-pCi/L;
- QA/QC Results - (field blanks and duplicates) indicating location collected; trip and office blanks; and spike sample results;
- Invalid Measurement Locations – missed locations, missing and or damaged/compromised testing devices.

Attachment 2 – Laboratory Report(s)

Attachment 3 – Sampling Location Map(s) – indicating approximate location of samples, duplicates and blanks.

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Detector and Deployment

Detector/Device Type:	☒ Passive ☐ Continuous	☒ Charcoal Absorption (CAD) ☐ Alpha Track (ATD) ☐ Other ☐ Electret ion Chamber (EIC) ☐ Electronic Integration (EID)
	Other–Specify here:	
Detector/Device Name:	Air Chek – Radon Test Kits	
Manufacturer:	Radon Lab	

Person(s) Deploying or Retrieving Test Devices and certification number	Organization/Company
Tyler McCleaf, CSP – Cert. #111004-RMP	KCI Technologies, Inc.
Shannon King	KCI Technologies, Inc.
If noncertified individuals, the qualified measurement professional providing oversight -	
Tyler McCleaf, CSP – Cert. #111004-RMP	KCI Technologies, Inc.

Testing

☒ Short-Term ☐ Long-Term	Length of Test (days):	3	Date of Deployment and Retrieval (mm/dd/yy):	12/02/24 12/05/24	03/11/25 03/14/25
Does the test period include weekends, school breaks or holidays?				☐ Yes ☒ No	
*If "**Yes**" please explain/detail in the space below:*					
Was HVAC operating under occupied conditions?				☒ Yes ☐ No	
*If "**No**" please explain/detail in the space below:*					

Testing (continued)

	Detectors Deployed				
	Ground-Contact		Upper-Level(s)		Total
Round of Testing	Initial	Follow-Up	Initial	Follow-Up	
Test Locations[1]	41	4	0	0	45
Duplicates[2]	5	1	0	0	6
Field Blanks[3]	2	1	0	0	3
				Grand Total	54

1 – include all detectors deployed (duplicates, field blanks); 1 detector per occupied (or intended to be occupied) ground-contact space ≤ 2,000-square feet; large spaces ≥ 2,000-square feet - 1 detector per 2,000-square feet or part thereof); and upper floors - 10% of all occupied or intended to be occupied rooms per floor (these are in addition to ground contact locations)
2 - 10% of all locations tested, per floor
3 – 5% of all locations tested, per floor

Quality Assurance / Quality Control (QA/QC)

A Quality Assurance plan that is consistent with ANSI/AARST MS-QA (Radon Measurement Systems Quality Assurance) was submitted under separate cover, and is available to review at the MCPS Radon Testing and Mitigation Program website. The following number of QA/QC samples are associated this facility.

	QA/QC Samples		Total
Round of Testing	Initial	Follow-Up	
Spikes[1]	Not applicable		10
Trip Blanks[2]	1	1	2
Office Blanks[3, 4]	1	1	2
			14

1 - 3% of EIC detectors; and 3% from each LOT of CAD and ATD detectors; a maximum of 6-spiked measurements per month for both EIC detectors and each LOT of CAD and ATD detectors.
2 – One per shipping container from start of detector deployment
3 – One per facility tested as devices are removed/allocated from the storage location for deployment;
4 - One additional blank, analyzed prior to deployment, for storage locations that have not been evaluated or monitored, for detectors that have been stored for more than 30-day durations.

Quality Assurance / Quality Control (continued)

Spike Sample Lab Results. Measured values are satisfactory, i.e., within ± 25% of the chamber's reference value?	☒ Yes ☐ No	
Quality Control measurements comply with QA/QC requirements in the submitted testing organization's/company's QA plan?	☒ Yes ☐ No	
Round of Testing	**Initial**	**Follow-Up**
All Field, Trip and Office Blanks are **≤** (less than or equal to) to the Method Detection Limit?	☒ Yes ☐ No	☒ Yes ☐ No
For all Duplicate Samples[1], the higher value is **≤ 2x** the lower value?	☒ Yes ☐ No	☒ Yes ☐ No
For all Duplicate Samples[1], Relative Percent Difference(s) (RPD)[2] are less than the Warning Level[3]?	☒ Yes ☐ No	☒ Yes ☐ No
For all Duplicate Samples[1], Relative Percent Difference(s) (RPD)[2] are less than the Control Level[3]?	☒ Yes ☐ No	☒ Yes ☐ No

1 – Duplicate Control – a "NO" response constitute a control failure and the space/location represented by the duplicate sample becomes an invalid measurement location and should be listed in the "Invalid Measurement Locations" Table attached to this report.

2 - The objective of duplicate tests is to assess the precision error of the measurement method or, how well two side-by-side measurements agree or disagree. Precision involving duplicates is calculated by using Relative Percent Difference (RPD). RPD is equal to the difference between the higher test result minus the lower value test result divided by the average of the two duplicate test results, multiplied by 100. The RPD result is then compared to the warning and control limits.

3 - The Warning Level is set at the deviation from ideal performance that would be expected to occur by chance only 5% of the time, and Control Limits are set at that deviation from ideal performance that would be expected to occur by chance only 1% of the time. The Warning Level indicates a potential problem, which should be investigated. The Control Level indicates that the measurement system should be subject to corrective action.

The control and warning levels for duplicates, based on the averaged duplicate test result, are -

Average concentration of the two duplicate test results	**Warning Level**	**Control Level**
< 2.0-pCi/L	1-pCi/L	Not applicable
Between 2.0 and 3.9-pCi/L	50% RPD	67% RPD
≥ 4.0-pCi/L	28% RPD	36% RPD

MCPS DEM SUSTAINABILITY & COMPLIANCE

School / Facility Radon Testing Report Form

Summary of Test Results[1] and Determination of Valid Measurements[2]

	Ground-Contact		Upper-Level(s)		Total
Round of Testing	**Initial**	**Follow-Up**	**Initial**	**Follow-Up**	
Number of test locations:	41	2	0	0	43
Number of locations ≥8.0-pCi/L:	0	0	0	0	0
Number of locations ≥4.0 and ≤8-pCi/L:	2	0	0	0	2
Number of locations ≥2.7 and <4-pCi/L:	9	1	0	0	10
Number of locations ≥2.0 and <2.7-pCi/L:	11	1	0	0	12
Number of missing required test locations[3]:	0	0	0	0	0
Number of failed duplicate control locations:	0	0	0	0	0
Percentage of missing test locations for the facility[4,5]:	0	0	0	0	0

1 – for locations with multiple test results, report consistent with Section 7.2(When Two Test Results Disagree) and 8.1.2 (Averaging) of ANSI/AARST MA-MFLB 2023 – Conducting Measurements of Radon in Multifamily, School, Commercial and Mix-Use Buildings;

2 - the allowance is to be calculated individually for Ground-Contact and Upper-Level(s) Test Locations;

3 – includes missed or inaccessible locations upon deployment or retrieval, damaged (not able to analyze) and missing detectors upon retrieval;

4 – if all valid measurements are <4.0-pCi/L and the total number of test locations are ≥18, there is an allowance of ≤33%. If less than 18 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023;

5 – if any valid measurements are ≥4.0-pCi/L and the total number of test locations are ≥20, there is an allowance of ≤25% of the total locations tested. If less than 20 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023.

Summary of Test Results[1] and Determination of Valid Measurements[2] (continued)

Round of Testing	Initial	Follow-Up
Were test devices deployed in all occupied and intended to be occupied rooms in contact with the ground, and, if applicable, 10% of upper floor rooms?	☒ Yes ☐ No	☒ Yes ☐ No
Were valid measurements obtained in all occupied and intended to be occupied rooms in contact with the ground, and, if applicable, 10% of upper floor rooms?	☐ Yes ☒ No	☒ Yes ☐ No
***If Yes to both above** – then Testing Status – **'No Further Testing Needed'** mark 'NA' below and complete Conclusions section*		
If No to either above, were all results obtained under 4.0-pCi/L **and** were sufficient valid measurements obtained?[1,2] ***If Yes,** then - '**No Further Testing Needed**' complete Conclusion section on first page.* ***If No**, then - '**Follow-up Testing Required**' continue below.*	☐ Yes ☒ No ☐ NA	☐ Yes ☐ No ☒ NA

1 – if all valid measurements are <4.0-pCi/L and the total number of test locations are ≥18, there is an allowance of ≤33%. If less than 18 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023 – Conducting Measurements of Radon in Multifamily, School, Commercial and Mix-Use Buildings to determine the allowance;
2 – if any valid measurements are ≥4.0-pCi/L and the total number of test locations are ≥20, there is an allowance of ≤25% of the total locations tested. If less than 20 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023 – Conducting Measurements of Radon in Multifamily, School, Commercial and Mix-Use Buildings to determine the number the allowance.

Follow-Up Testing

Required –

- If an insufficient number (greater than the allowance provided above) of valid measurements were obtained during the initial round of testing (the "missing required test locations" in the table above);
- Any location test results ≥ 4.0-pCi/L;
- Any location where duplicates fail QC checks; and or
- At the discretion of MCPS IAQ Staff

Reason for Follow-Up Testing	Testing Procedure	Follow-up Result	Conclusion
Insufficient Number of Measurements	Follow same procedures as Initial Testing	Not Applicable	Follow Initial Testing procedures
Results ≥ 4.0-pCi/L	Deploy two Short-term follow-up tests and required blanks and duplicates; Average the results of the two tests	≥4.0	Mitigation Required
Failed QC checks		≥2.0 and <4.0	Consider Mitigation
		<2.0	Mitigation Not Required

- ***If follow-up testing identifies additional spaces requiring additional testing it will be performed as part of the ongoing follow-testing round.***

Attachment 1:

Summary Data Tables

Table 1- Radon Testing Results		
Belmont Elementary School		
Test Period: 12/02/2024 - 12/05/2024		
Kit Number	Room / Area	Result
11903419	100	1.9
11903441	103	3.3
11903444	103	3.0
11903435	104	2.5
11903434	105	2.0
11903433	106	1.9
11903436	107	< 0.3
11903443	107	1.2
11903404	108	2.1
11903401	109	1.6
11903449	110	2.2
11903460	111	3.0
11903451	112	2.8
11903452	112	2.9
11903458	113	1.7
11903457	114	1.8
11903465	115	2.0
11903459	116	2.4
11903467	117	2.4
11903475	118	1.3
11903480	118	< 0.3
11903476	119	1.6
11903481	119	1.4
11903474	120	1.8
11903414	121	1.3
11903473	122	1.1
11903450	123	5.4
11903466	124	1.9
11903482	124	2.3
11903405	127	1.8
11903425	128	< 0.3
11903427	138	2.6
11903403	100I	1.0
11903407	101A	1.1
11903468	101B	1.5
11903417	APR	2.8
11903418	APR	2.6
11903442	BSO	2.8
11903402	CONFERENCE	1.4
11903410	GYM	1.9

Table 1- Radon Testing Results		
Belmont Elementary School		
Test Period: 12/02/2024 - 12/05/2024		
Kit Number	Room / Area	Result
11903412	GYM	2.3
11903409	GYM OFF	3.6
11903411	GYM OFF	4.2
11903426	HEALTH	1.1
11903420	MAIN OFFICE	1.2
11903406	MEDIA	1.6
11903428	MEDIA	1.6
11903413	MEDIA OFF	2.8

Table 2 - Summary Testing Results ≥2.0 pCi/L							
Belmont Elementary School							
Test Period: 12/02/2024 - 12/05/2024							
≥2.0 and <2.7 pCi/L		≥2.7 and <4.0 pCi/L		≥4.0 and <8.0 pCi/l		≥8.0 pCi/L	
Room / Area	Result	Room / Area	Result	Room / Area	Result	Room / Area	Result
105	2.0	MEDIA OFF	2.8	GYM OFF	4.2	N/A	N/A
115	2.0	APR	2.8	123	5.4		
108	2.1	BSO	2.8				
110	2.2	112	2.8				
GYM	2.3	112	2.9				
124	2.3	103	3.0				
116	2.4	111	3.0				
117	2.4	103	3.3				
104	2.5	GYM OFF	3.6				
APR	2.6						
138	2.6						

Table 3 - QC Radon Testing Results			
Belmont Elementary School			
Test Period: 12/02/2024 - 12/05/2024			
Kit Number	**QC Type**	**Room / Area**	**Result**
11903444	D	103	3.0
11903436	FB	107	< 0.3
11903452	D	112	2.9
11903480	FB	118	< 0.3
11903481	D	119	1.4
11903482	D	124	2.3
11903411	D	Gym Office	4.2
11892899	OB	OFFICE BLANK	< 0.3
11892900	TB	TRAVEL BLANK	< 0.3

Table 3a - Duplicate Worksheet / Data Validation

Belmont Elementary School

Test Period: 12/02/2024 - 12/05/2024

Sample ID			Duplicate Concentrations (pCi/L) and QC Checks							
Kit Numbers		Room / Area	Higher	Lower	Check #1 (Pass/Fail)	2x the Lower	Check #2 (Pass/Fail)	Average	Relative Percent Difference (RPD)	Check #3
119903409	11903411	Gym Office	4.2	3.6	✓	7.2	PASS	3.9	15.4%	✓
11903441	11903444	103	3.3	3.0	✓	6.0	PASS	3.2	9.5%	✓
11903452	11903451	112	2.9	2.8	✓	5.6	PASS	2.9	3.5%	✓
11903474	11903475	119	1.6	1.4	✓	2.8	PASS	1.5	<1-pCi/L	✓

NOTES:

QC Check #1 - Data Entry

QC Check #2 - Higher duplicate concentration is < or = to 2x the Lower

QC Check #3 - Meets RPD Limits, by average duplicate concentration

- enter 2 if RPD is BELOW warning and control levels, AND passes QC Check 1 and 2
- enter 1 if RPD is ABOVE warning and BELOW control levels, AND passes QC Check 1 and 2
- enter 0 if RPD is ABOVE control level, or 'FAILS' QC Check 1 or 2

Average (pCi/L)	Warning Level	Control Level
< 2.0	1-pCi/L	NA
Between 2.0 and 3.9	50% RPD	67% RPD
≥ 4.0	28% RPD	36% RPD

Table 4 - Summary of Invalid Measurement Locations		
Belmont Elementary School		
Test Period: 12/02/24 - 12/05/24		
Kit Number	**Room/Area**	**Reason**
N/A	N/A	N/A

Table 1- Radon Testing Results		
Belmont Elementary School RT		
Test Period: 3/11/2025 - 3/14/2025		
Kit Number	**Room / Area**	**Result**
11892441	123	3.1
11892443	123	2.3
11892438	GYM OFFICE	0.9
11892439	GYM OFFICE	1.0
11892440	GYM OFFICE	1.1
11892442	GYM OFFICE	< 0.3

Table 2 - Summary Testing Results ≥2.0 pCi/L							
Belmont Elementary School RT							
Test Period: 3/11/2025 - 3/14/2025							
≥2.0 and <2.7 pCi/L		≥2.7 and <4.0 pCi/L		≥4.0 and <8.0 pCi/l		≥8.0 pCi/L	
Room / Area	Result	Room / Area	Result	Room / Area	Result	Room / Area	Result
123	2.3	123	3.1	N/A	N/A	N/A	N/A

Table 3 - QC Radon Testing Results			
Belmont Elementary School RT			
Test Period: 3/11/2025 - 3/14/2025			
Kit Number	**QC Type**	**Room / Area**	**Result**
11892440	D	GYM OFFICE	1.1
11892442	FB	GYM OFFICE	< 0.3
11886599	OB	OFFICE BLANK	< 0.3
11886600	TB	TRAVEL BLANK	< 0.3

Table 3a - Duplicate Worksheet / Data Validation

Belmont Middle School RT

Test Period: 3/11/2025 - 3/14/2025

Sample ID			Duplicate Concentrations (pCi/L) and QC Checks							
Kit Numbers		Room / Area	Higher	Lower	Check #1 (Pass/Fail)	2x the Lower	Check #2 (Pass/Fail)	Average	Relative Percent Difference (RPD)	Check #3
11892440	11892438 11892439	GYM OFFICE	1.1	1.0	✓	1.9	PASS	1.0	<1-pCi/L	✓

NOTES:

QC Check #1 - Data Entry

QC Check #2 - Higher duplicate concentration is < or = to 2x the Lower

QC Check #3 - Meets RPD Limits, by average duplicate concentration

- enter 2 if RPD is BELOW warning and control levels, AND passes QC Check 1 and 2
- enter 1 if RPD is ABOVE warning and BELOW control levels, AND passes QC Check 1 and 2
- enter 0 if RPD is ABOVE control level, or 'FAILS' QC Check 1 or 2

Average (pCi/L)	Warning Level	Control Level
< 2.0	1-pCi/L	NA
Between 2.0 and 3.9	50% RPD	67% RPD
≥ 4.0	28% RPD	36% RPD

Table 4 - Summary of Invalid Measurement Locations		
Belmont Elementary School RT		
Test Period: 3/11/25 - 3/14/25		
Kit Number	**Room/Area**	**Reason**
N/A	N/A	N/A

Attachment 2:

Laboratory Reports

December 9, 2024 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
BELMONT ES
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11903419	100	2024-12-02 @ 9:00 am	2024-12-05 @ 11:00 am	1.9 ± 0.4	2024-12-09
11903403	100I	2024-12-02 @ 9:00 am	2024-12-05 @ 11:00 am	1.0 ± 0.3	2024-12-09
11903407	101A	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	1.1 ± 0.4	2024-12-09
11903468	101B	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	1.5 ± 0.4	2024-12-09
11903444	103	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	3.0 ± 0.4	2024-12-09
11903441	103	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	3.3 ± 0.4	2024-12-09
11903435	104	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	2.5 ± 0.4	2024-12-09
11903434	105	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	2.0 ± 0.4	2024-12-09
11903433	106	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	1.9 ± 0.4	2024-12-09
11903443	107	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	1.2 ± 0.4	2024-12-09
11903436	107	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	< 0.3	2024-12-09
11903404	108	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	2.1 ± 0.4	2024-12-09
11903401	109	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	1.6 ± 0.4	2024-12-09
11903449	110	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	2.2 ± 0.4	2024-12-09
11903460	111	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	3.0 ± 0.4	2024-12-09
11903452	112	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	2.9 ± 0.4	2024-12-09
11903451	112	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	2.8 ± 0.4	2024-12-09
11903458	113	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	1.7 ± 0.4	2024-12-09
11903457	114	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	1.8 ± 0.4	2024-12-09
11903465	115	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	2.0 ± 0.4	2024-12-09
11903459	116	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	2.4 ± 0.4	2024-12-09
11903467	117	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	2.4 ± 0.4	2024-12-09
11903475	118	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	1.3 ± 0.4	2024-12-09
11903480	118	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	< 0.3	2024-12-09
11903476	119	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	1.6 ± 0.4	2024-12-09
11903481	119	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	1.4 ± 0.4	2024-12-09
11903474	120	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	1.8 ± 0.4	2024-12-09
11903414	121	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	1.3 ± 0.4	2024-12-09
11903473	122	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	1.1 ± 0.3	2024-12-09
11903450	123	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	5.4 ± 0.5	2024-12-09
11903466	124	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	1.9 ± 0.4	2024-12-09
11903482	124	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	2.3 ± 0.4	2024-12-09
11903405	127	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	1.8 ± 0.4	2024-12-09
11903425	128	2024-12-02 @ 9:00 am	2024-12-05 @ 11:00 am	< 0.3	2024-12-09
11903427	138	2024-12-02 @ 9:00 am	2024-12-05 @ 11:00 am	2.6 ± 0.4	2024-12-09
11903418	APR	2024-12-02 @ 9:00 am	2024-12-05 @ 11:00 am	2.6 ± 0.4	2024-12-09
11903417	APR	2024-12-02 @ 9:00 am	2024-12-05 @ 11:00 am	2.8 ± 0.4	2024-12-09

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

December 9, 2024 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
BELMONT ES
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11903442	BSO	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	2.8 ± 0.4	2024-12-09
11903402	CONFERENCE	2024-12-02 @ 9:00 am	2024-12-05 @ 11:00 am	1.4 ± 0.4	2024-12-09
11903412	GYM	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	2.3 ± 0.4	2024-12-09
11903410	GYM	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	1.9 ± 0.4	2024-12-09
11903411	GYM OFF	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	4.2 ± 0.4	2024-12-09
11903409	GYM OFF	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	3.6 ± 0.4	2024-12-09
11903426	HEALTH	2024-12-02 @ 9:00 am	2024-12-05 @ 11:00 am	1.1 ± 0.4	2024-12-09
11903420	MAIN OFFICE	2024-12-02 @ 9:00 am	2024-12-05 @ 11:00 am	1.2 ± 0.3	2024-12-09
11903428	MEDIA	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	1.6 ± 0.4	2024-12-09
11903406	MEDIA	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	1.6 ± 0.4	2024-12-09
11903413	MEDIA OFF	2024-12-02 @ 10:00 am	2024-12-05 @ 11:00 am	2.8 ± 0.4	2024-12-09

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

P4792 / TYLER MCCLEAF

Kit Number	Start Date	Start Time	End Date	End Time	Temp.	Facility	Building	Room	Project ID	Floor	Result
11892899	2024-12-02	11:00 am	2024-12-05	11:00 am	70	OFFICE	MAIN	O		1	< 0.3
11892900	2024-12-02	11:00 am	2024-12-05	11:00 am	70	TRAVEL	MAIN	T		1	< 0.3
11904003	2024-12-02	10:00 am	2024-12-05	11:00 am	70	JAMES HUBERT BLAKE HS	MAIN	SMALL GYM		1	1.4
11904272	2024-12-03	11:00 am	2024-12-06	11:00 am	70	TRAVEL	MAIN	T		1	< 0.3
11904291	2024-12-03	11:00 am	2024-12-06	11:00 am	70	OFFICE	MAIN	O		1	< 0.3

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 20001560

NOMINAL Conditions: Radon Conc 50.6 pCi/L Rel. Hum 50.6 % Temp. 70.8 F

Date Start: 12/14/24 Date Stop: 12/17/24	Date Start: _____ Date Stop: _____
Time Start: 0815 Time Stop: 0815	Time Start: _____ Time Stop: _____
Device No.'s: (3) CHAR BAGS	Device No.'s: _____
11477880, 11477883, 11477896	_____
_____	_____
B4 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

December 23, 2024 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
SK
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11477880	SK1	2024-12-14 @ 8:00 am	2024-12-17 @ 8:00 am	52.0 ± 4.2	2024-12-23
11477883	SK2	2024-12-14 @ 8:00 am	2024-12-17 @ 8:00 am	54.6 ± 4.4	2024-12-23
11477896	SK3	2024-12-14 @ 8:00 am	2024-12-17 @ 8:00 am	45.5 ± 3.6	2024-12-23

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KCI TECHNOLOGIES

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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 – Testing December 2nd – December 5th, 2024

Name of Schools:

1. Argyle MS
2. Benjamin Banneker MS
3. Belmont ES
4. James Hubert Blake HS
5. Briggs Chaney MS
6. Burtonsville ES

	Date	Initials
Radon Test Kits Deployed	12/02/2024	BMU
Radon Test Kits Collected	12/05/2024	BMU
Radon Test Kits Shipped to Lab*	12/05/2024	BMU
Radon Test Kits Received by Lab*	12/09/2024	BMU

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

March 17, 2025

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11892441	123	2025-03-11 @ 11:00 am	2025-03-14 @ 11:00 am	3.1 ± 0.3	2025-03-17
11892443	123	2025-03-11 @ 11:00 am	2025-03-14 @ 11:00 am	2.3 ± 0.3	2025-03-17
11892438	GYM OFFICE	2025-03-11 @ 11:00 am	2025-03-14 @ 11:00 am	0.9 ± 0.3	2025-03-17
11892439	GYM OFFICE	2025-03-11 @ 11:00 am	2025-03-14 @ 11:00 am	1.0 ± 0.3	2025-03-17
11892440	GYM OFFICE	2025-03-11 @ 11:00 am	2025-03-14 @ 11:00 am	1.1 ± 0.3	2025-03-17
11892442	GYM OFFICE	2025-03-11 @ 11:00 am	2025-03-14 @ 11:00 am	< 0.3	2025-03-17

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

March 17, 2025

** LABORATORY ANALYSIS REPORT **

Radon test result report for:
OFFICE
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11892446	OB	2025-03-11 @ 11:00 am	2025-03-14 @ 11:00 am	< 0.3	2025-03-17
11886599	OB	2025-03-10 @ 11:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17

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March 17, 2025

** LABORATORY ANALYSIS REPORT **

Radon test result report for:
TRAVEL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11892444	TB	2025-03-11 @ 11:00 am	2025-03-14 @ 11:00 am	< 0.3	2025-03-17
11886600	TB	2025-03-10 @ 11:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17

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 20002919

NOMINAL Conditions: Radon Conc 7.0 pCi/L Rel. Hum 51.4 % Temp. 70.7 F

Date Start: 3/7/25 Date Stop: 3/10/25	Date Start: _____ Date Stop: _____
Time Start: 0832 Time Stop: 0832	Time Start: _____ Time Stop: _____
Device No.'s: (7) CHAR BAGS	Device No.'s: _____
11886401 thru 11886406,	
11886410	
G3 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

March 19, 2025 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
QC
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11886401	SK1	2025-03-07 @ 9:00 am	2025-03-10 @ 9:00 am	7.8 ± 1.1	2025-03-19
11886405	SK2	2025-03-07 @ 9:00 am	2025-03-10 @ 9:00 am	7.1 ± 1.1	2025-03-19
11886406	SK3	2025-03-07 @ 9:00 am	2025-03-10 @ 9:00 am	7.7 ± 1.1	2025-03-19
11886403	SK4	2025-03-07 @ 9:00 am	2025-03-10 @ 9:00 am	7.9 ± 1.2	2025-03-19
11886404	SK5	2025-03-07 @ 9:00 am	2025-03-10 @ 9:00 am	7.6 ± 1.2	2025-03-19
11886410	SK6	2025-03-07 @ 9:00 am	2025-03-10 @ 9:00 am	7.0 ± 1.1	2025-03-19
11886402	SK7	2025-03-07 @ 9:00 am	2025-03-10 @ 9:00 am	8.6 ± 1.2	2025-03-19

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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 – Re-Testing March 11th – March 14th, 2025

Name of Schools:

1. Albert Einstein HS
2. Argyle MS
3. Belmont ES
4. Benjamin Banneker MS
5. Cannon Road ES
6. Dr. Charles R. Drew ES
7. East Silver Spring ES
8. James Hubert Blake HS
9. William Farquhar MS

	Date	Initials
Radon Test Kits Deployed	3/11/2025	BMM
Radon Test Kits Collected	3/14/2025	BMM
Radon Test Kits Shipped to Lab*	3/14/2025	BMM
Radon Test Kits Received by Lab*	3/16/2025	BMM

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

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MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Belmont Elementary School
Date of Report	2/28/2020
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 ≥4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	2.1 pCi/L

Project Status

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

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2/28/2020

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

Re: Radon Testing Services

KCI Job #1214634188

Location: Belmont Elementary School
19528 Olney Mill Road
Olney, Maryland 20832

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 Belmont Elementary School, located at 19528 Olney Mill Road in Olney, Maryland 20832 (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 2/3/2020 and deployed 6 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 piC/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 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 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 NRSB certified analytical laboratory for radon analysis (certification #ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

EVALUATION OF TESTING CONDITIONS

These tests represent:

- Follow-up to initial testing.

These tests were conducted to:

- Evaluate radon concentrations at the facility.

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures ranged from the mid-30s to the low-50s; and high temperatures ranged from the upper-40s to the mid-60s. Maximum sustained winds ranged from 13-21 miles per hour. Average humidity was approximately 76%. A total of 1.09 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). Follow-up 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	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		
Belmont Elementary School		
Test Period: 02/03/20-02/06/20		
Kit Number	Room / Area	Result
9339958	MPR	1.7
9339963	MPR	1.8
9339959	MPR	2.1
9339960	MPR	<0.3
9334909	OFFICE BLANK	<0.3
9334910	OFFICE BLANK	<0.3

Table 2- Radon Testing Results			
Belmont Elementary School			
Test Period: 02/03/20-02/06/20			
Kit Number	QC Type	Room / Area	Result
9339959	D	MPR	2.1
9339960	FB	MPR	<0.3
9334902	TRANSIT BLANK	NA	<0.3

ATTACHMENT C

Laboratory Analytical Results

February 11, 2020 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9339958	MPR	2020-02-03 @ 12:00 pm	2020-02-06 @ 11:00 am	1.7 ± 0.5	2020-02-11
9339963	MPR	2020-02-03 @ 12:00 pm	2020-02-06 @ 11:00 am	1.8 ± 0.5	2020-02-11
9339959	MPR	2020-02-03 @ 12:00 pm	2020-02-06 @ 11:00 am	2.1 ± 0.5	2020-02-11
9339960	MPR	2020-02-03 @ 12:00 pm	2020-02-06 @ 11:00 am	< 0.3	2020-02-11

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 - 9341725 thru 9341733	Device No.'s: _____
52 Ccpt	
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

February 28, 2020 **** 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
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
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

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

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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 2019 Week 1 Retesting

Name of Schools:

1. Belmont E.S.
2. Clarksburg H.S.
3. Damascus E.S.
4. Damascus H.S.
5. DuFief E.S.
6. Fields Road E.S.
7. Gaithersburg E.S.
8. McAuliffe E.S.
9. Quince Orchard H.S.
10. Snowden Farms E.S.
11. South Lake E.S.
12. Stone Mill E.S.
13. Travilah ES
14. Watkins Mill ES
15. Whitman H.S.

	Date	Initials
Radon Test Kits Deployed	02/03/20 to 02/04/20	JM
Radon Test Kits Collected	02/06/20 to 02/07/20	JM
Radon Test Kits Shipped to Lab*	02/07/20	JM
Radon Test Kits Received by Lab*	02/10/20	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

Site Name	Belmont Elementary School
Date of Report	1/28/2020
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	38
# Rooms ≥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 need re-testing.

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1/28/2020

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: Belmont Elementary School
19528 Olney Mill Road
Olney, Maryland 20832

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 Belmont Elementary School, located at 19528 Olney Mill Road in Olney, Maryland 20832 (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/departments/facilities/maintenance/default.aspx?id=458858 or www.epa.gov/radon.

KCI visited the site on 12/9/2019 and deployed forty-seven (47) 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 12/12/2019 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 upper-30s and high temperatures ranged from the upper-30s to the mid-50s. Maximum sustained winds ranged from 7-21 miles per hour. Average humidity was around 75%. 0.52 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 piC/L	None	N/A
≤4.0 piC/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		
Belmont Elementary School		
Test Period: 12/9/2019-12/12/2019		
Kit Number	Room / Area	Result
9335601	WR	0.6
9335602	CR3	1.2
9335603	CR4	1.4
9335604	CR12	1.1
9335605	IMC	0.8
9335606	IMC	1.3
9335607	IMC	< 0.3
9335608	ART	1.3
9335609	COUNSELOR	0.7
9335610	SPEECH	0.7
9335611	PE OFFICE	2.2
9335612	GYM	1.9
9335613	IMC	0.9
9335614	MPR	1.7
9335615	SP	0.9
9335616	GYM	1.9
9335618	GYM	1.6
9335619	CR2	1.5
9335620	BSO	1.4
9335621	MAIN OFFICE	1.3
9335622	PRINCIPAL OFFICE	1.8
9335623	HEALTH RM	1.3
9335624	CONF RM1	1.7
9335625	STAFF LOUNGE	1.5
9335626	KITCHEN	1.7
9335705	CR18	0.7
9335707	CR14	0.9
9335708	CR19	0.6
9335709	CR21	0.7
9335710	CR11	1.1
9335711	CR22	0.9
9335713	CR10	1
9335714	CR9	1.6
9335715	CR9	0.7
9335716	CR13	1.1
9335717	CR16	0.9
9335718	CR15	1
9335719	COMPUTER RM	1
9335720	K1	1
9335721	K2	0.8
9335726	CR7	1
9335727	CR8	1.3
9335730	CR5	1.4
9335733	COMPUTER RM	< 0.3
9335734	COMPUTER RM	0.8
9335735	CR6	0.6
9334501	OFFICE BLANK	<0.3
9335617	MPR	MISSING

Table 2- Radon Testing Results			
Belmont Elementary School			
Test Period: 12/9/2019-12/12/2019			
Kit Number	QC Type	Room / Area	Result
9335618	D	GYM	1.6
9335613	D	IMC	0.9
9335607	FB	IMC	<0.3
9335714	D	CR9	1.6
9335719	D	COMPUTER RM	1
9335733	FB	COMPUTER RM	<0.3
9334850	TRANSIT BLANK	NA	< 0.3
9334914	TRANSIT BLANK	NA	< 0.3
9334916	TRANSIT BLANK	NA	< 0.3
9334963	TRANSIT BLANK	NA	< 0.3

Summary of Missed Locations		
Belmont Elementary School		
Test Period: 12/9/2019 - 12/12/2019		
Kit Number	Room/Area	Result
	NA	

Summary of Missing, Compromised and >/= 4 piC/L Tests		
Belmont Elementary School		
Test Period: 12/9/2019-12/12/2019		
Kit Number	Room/Area	Result
9335617	*MPR	Missing

Table Note:
* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

December 17, 2019 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
BELMONT ES
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9335608	ART	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.3 ± 0.4	2019-12-17
9335620	BSO	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.4 ± 0.4	2019-12-17
9335733	COMPUTER RM	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	< 0.3	2019-12-16
9335719	COMPUTER RM	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.0 ± 0.4	2019-12-17
9335734	COMPUTER RM	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	0.8 ± 0.4	2019-12-17
9335624	CONF RM1	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.7 ± 0.5	2019-12-17
9335609	COUNSELOR	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	0.7 ± 0.4	2019-12-17
9335713	CR10	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.0 ± 0.4	2019-12-17
9335710	CR11	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.1 ± 0.4	2019-12-17
9335604	CR12	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.1 ± 0.4	2019-12-17
9335716	CR13	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.1 ± 0.4	2019-12-17
9335707	CR14	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	0.9 ± 0.4	2019-12-17
9335718	CR15	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.0 ± 0.4	2019-12-17
9335717	CR16	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	0.9 ± 0.4	2019-12-17
9335705	CR18	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	0.7 ± 0.4	2019-12-17
9335708	CR19	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	0.6 ± 0.4	2019-12-17
9335619	CR2	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.5 ± 0.4	2019-12-17
9335709	CR21	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	0.7 ± 0.4	2019-12-17
9335711	CR22	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	0.9 ± 0.4	2019-12-17
9335602	CR3	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.2 ± 0.4	2019-12-17
9335603	CR4	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.4 ± 0.4	2019-12-17
9335730	CR5	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.4 ± 0.5	2019-12-16
9335735	CR6	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	0.6 ± 0.4	2019-12-17
9335726	CR7	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.0 ± 0.4	2019-12-17
9335727	CR8	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.3 ± 0.4	2019-12-17
9335715	CR9	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	0.7 ± 0.4	2019-12-17
9335714	CR9	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.6 ± 0.4	2019-12-17
9335612	GYM	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.9 ± 0.4	2019-12-16
9335618	GYM	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.6 ± 0.4	2019-12-17
9335616	GYM	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.9 ± 0.4	2019-12-17
9335623	HEALTH RM	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.3 ± 0.4	2019-12-17
9335613	IMC	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	0.9 ± 0.4	2019-12-16
9335605	IMC	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	0.8 ± 0.4	2019-12-17
9335606	IMC	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.3 ± 0.4	2019-12-17
9335607	IMC	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	< 0.3	2019-12-17
9335720	K1	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.0 ± 0.4	2019-12-17
9335721	K2	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	0.8 ± 0.4	2019-12-17

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

December 17, 2019 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
BELMONT ES
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9335626	KITCHEN	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.7 ± 0.4	2019-12-17
9335621	MAIN OFFICE	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.3 ± 0.4	2019-12-17
9335614	MPR	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.7 ± 0.4	2019-12-17
9335611	PE OFFICE	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	2.2 ± 0.4	2019-12-16
9335622	PRINCIPAL OFFICE	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.8 ± 0.5	2019-12-16
9335615	SP	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	0.9 ± 0.4	2019-12-17
9335610	SPEECH	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	0.7 ± 0.4	2019-12-16
9335625	STAFF LOUNGE	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	1.5 ± 0.4	2019-12-17
9335601	WR	2019-12-09 @ 9:00 am	2019-12-12 @ 10:00 am	0.6 ± 0.4	2019-12-16

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EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KEI Technologies Inc. Job Number 193475

NOMINAL Conditions: Radon Conc 25.7 pCi/L Rel. Hum 74.6 % Temp. 69.9 F

Date Start: 12/13/19 Date Stop: 12/16/19 | Date Start: _____ Date Stop: _____

Time Start: 0806 Time Stop: 0806 | Time Start: _____ Time Stop: _____

(Group 1)

Device No.'s: (20) Char. Bags - | Device No.'s: _____

9334502 thru 9334510, 9334514, 9334516, 9334517, ~~9334518~~ acm, 9334519 9334522 thru 9334528

B4

Date Start: 12/13/19 Date Stop: 12/16/19 | Date Start: _____ Date Stop: _____

Time Start: ~~0800~~ acm Time Stop: 0811 | Time Start: _____ Time Stop: _____

0811

(Group 2)

Device No.'s: (20) Char. Bags - | Device No.'s: _____

9334529 thru 9334538, 9334540, 9334542 thru 9334550

B3

Date Start: 12/13/19 Date Stop: 12/16/19 | Date Start: _____ Date Stop: _____

Time Start: 0816 Time Stop: 0816 | Time Start: _____ Time Stop: _____

(Group 3)

Device No.'s: (20) Char. Bags - | Device No.'s: _____

9334551, 9334552, 9334562, 9334555 thru 9334559, 9334569, 9334576, 9334579, 9334580, 9334583, 9334584, 9334591, 9334593, 9334594, 9334597, 9334598, 9334599

B2

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

December 18, 2019 **** 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
9334583	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.3 ± 1.4	2019-12-18
9334529	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.3 ± 1.5	2019-12-18
9334597	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.8 ± 1.4	2019-12-18
9334534	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.3 ± 1.4	2019-12-18
9334540	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.9 ± 1.4	2019-12-18
9334546	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.9 ± 1.5	2019-12-18
9334551	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.3 ± 1.4	2019-12-18
9334558	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.6 ± 1.4	2019-12-18
9334579	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.6 ± 1.4	2019-12-18
9334593	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.3 ± 1.4	2019-12-18
9334532	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.6 ± 1.4	2019-12-18
9334537	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.8 ± 1.4	2019-12-18
9334544	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.5 ± 1.4	2019-12-18
9334549	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.4 ± 1.5	2019-12-18
9334556	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.1 ± 1.4	2019-12-18
9334569	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.7 ± 1.4	2019-12-18
9334584	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.4 ± 1.5	2019-12-18
9334530	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.6 ± 1.4	2019-12-18
9334598	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.7 ± 1.4	2019-12-18
9334535	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.0 ± 1.4	2019-12-18
9334542	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.7 ± 1.4	2019-12-18
9334547	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	25.2 ± 1.5	2019-12-18
9334552	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.2 ± 1.4	2019-12-18
9334559	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.1 ± 1.4	2019-12-18
9334580	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.1 ± 1.4	2019-12-18
9334594	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.1 ± 1.4	2019-12-18
9334533	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.3 ± 1.5	2019-12-18
9334538	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.6 ± 1.5	2019-12-18
9334545	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.0 ± 1.4	2019-12-18
9334550	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.1 ± 1.4	2019-12-18
9334557	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.6 ± 1.5	2019-12-18
9334576	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.3 ± 1.4	2019-12-18
9334591	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.7 ± 1.4	2019-12-18
9334531	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.3 ± 1.5	2019-12-18
9334599	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.8 ± 1.4	2019-12-18
9334536	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.4 ± 1.5	2019-12-18
9334543	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.4 ± 1.5	2019-12-18

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December 18, 2019 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

N/A

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9334548	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.0 ± 1.4	2019-12-18
9334555	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.4 ± 1.4	2019-12-18
9334562	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.5 ± 1.4	2019-12-18

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

December 18, 2019 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
S
N/A

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9334505	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.5 ± 1.5	2019-12-18
9334510	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.4 ± 1.5	2019-12-18
9334522	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.9 ± 1.4	2019-12-18
9334527	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	22.6 ± 1.4	2019-12-18
9334503	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.6 ± 1.4	2019-12-18
9334508	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.7 ± 1.5	2019-12-18
9334517	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.5 ± 1.4	2019-12-18
9334525	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.8 ± 1.4	2019-12-18
9334506	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.3 ± 1.5	2019-12-18
9334514	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.5 ± 1.5	2019-12-18
9334523	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.6 ± 1.4	2019-12-18
9334528	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.8 ± 1.4	2019-12-18
9334504	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.8 ± 1.4	2019-12-18
9334509	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.5 ± 1.4	2019-12-18
9334519	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.1 ± 1.4	2019-12-18
9334526	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.3 ± 1.4	2019-12-18
9334502	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.7 ± 1.4	2019-12-18
9334507	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.7 ± 1.5	2019-12-18
9334516	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	22.2 ± 1.3	2019-12-18
9334524	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.6 ± 1.5	2019-12-18

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

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 2019 Week 1

Name of Schools:

1. Baker M.S.
2. Belmont E.S.
3. Clarksburg E.S.
4. Clarksburg H.S.
5. Clearspring E.S.
6. Damascus E.S.
7. Damascus H.S.
8. Dufief E.S.
9. Fields Road E.S.
10. Gaithersburg E.S.
11. Germantown E.S.
12. Great Seneca Creek E.S.
13. Jones Lane E.S.
14. Lake Seneca E.S.
15. McAuliffe E.S.
16. Quince Orchard H.S.
17. Rosa Parks M.S.
18. Snowden Farm E.S.
19. South Lake E.S.
20. Stone Mill E.S.
21. Travilah E.S.
22. Watkins Mill E.S.
23. Watkins Mill H.S.
24. Whitman H.S.

	Date	Initials
Radon Test Kits Deployed	12/09/19 to 12/10/19	
Radon Test Kits Collected	12/12/19 to 12/13/19	
Radon Test Kits Shipped to Lab*	12/13/19	
Radon Test Kits Received by Lab*	12/16/19	

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

RADON SCREENING SURVEY – FOLLOW-UP BELMONT ES ELEMENTARY SCHOOL

19528 Olney Mill Rd, Olney, Maryland 20832

EXECUTIVE SUMMARY

Date of Test Report:	3/10/16
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	1
# Rooms ≥ 4.0 pCi/L:	0
Low Value:	1.9
High Value:	2.0
Confirmed Rooms ≥ 4.0 pCi/L US EPA Action Level	0

Summary of Sampling Events ≥ 4.0 pCi/L

Room	Result (pCi/L) 2/23/16 (Rev 1)	Result (pCi/L) 3/10/16	Average Result (pCi/L)
104	<0.3 (tampered)	2.0	1.2

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: Belmont Elementary School

Date of Test Report:	3/10/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	1
# Rooms ≥ 4.0 pCi/L:	0
Low Value:	1.9
High Value:	2.0

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

KCI TECHNOLOGIES

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

March 10, 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: Belmont Elementary School
19528 Olney Mill Road
Olney, MD 20832

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 Belmont Elementary School, located at 19528 Olney Mill Road in Olney, Maryland 20832 (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 three (3) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

As a quality control measure, KCI included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, KCI submitted six (6) test kits to Bowser-Morner, Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner prior to being returned to the laboratory for analysis.

KCI returned to the site on 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 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		
Belmont Elementary School		
Test Period: 02/22/16-02/25/16		
Kit Number	**Room / Area**	**Result**
7729775	104	2.0

Table Note:
* Missing or Compromised Sample

Radon Testing Results		
Belmont Elementary School		
Test Period: 02/22/16-02/25/16		
Kit Number	**QC Type**	**Result**
7729776	D (104)	1.9
7729783	* FB (104:Missing)	-

Table Note:
* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

March 8, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

BELMONT ELEMENTARY SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7729783		@	@		
7729775	104	2016-02-22 @ 8:00 am	2016-02-25 @ 10:00 am	2.0 ± 0.3	2016-02-29
7729776	104	2016-02-22 @ 8:00 am	2016-02-25 @ 10:00 am	1.9 ± 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

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. 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

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: Belmont Elementary School

Date of Test Report:	2/23/2016 (Rev 1)
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	41
# Rooms ≥ 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	1.9

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

KCI TECHNOLOGIES

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

February 23, 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: Belmont Elementary School
19528 Olney Mill Road
Olney, MD 20832

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 Belmont Elementary School, located at 19528 Olney Mill Road in Olney, Maryland 20832 (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 fifty-three (53) 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 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. 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		
Belmont Elementary		
Test Period: 12/21/15-12/24/15		
Kit Number	**Room / Area**	**Result**
7713241	101	1.6
7713245	102	1.2
7713238	103	1.2
7713226	105	1.4
7713244	106	1.3
7713219	106	1.2
7713230	109	1.6
7713229	109	1.0
7713214	110	1.9
7713223	111	< 0.3
7713222	112	0.7
7713249	113	0.8
7713242	114	0.8
7713217	114	1.2
7713240	115	0.7
7713237	134	0.6
7713213	138	0.6
7713216	139	0.9
7713211	140	< 0.3
7713208	141	< 0.3
7713204	142	< 0.3
7713205	143	< 0.3
7713201	144	< 0.3
7713246	145	< 0.3
7713262	146	0.7
7713260	147	< 0.3
7713254	148	0.9
7713257	149	0.8
7713255	150	0.9
7713212	151	0.9
7713202	152	0.7
7713236	153	1.3
7713210	154	1.3
7713206	155	1.5
7713203	155	1.6
7713251	156	1.1
7713258	157	< 0.3
7713261	158	< 0.3
7713259	159	0.9
7713247	160	0.6
7713256	161	< 0.3
7713252	162	1.0
7713215	350	< 0.3
7710308	* 104 (tampered)	< 0.3
7713248	CONFERENCE ROOM	1.9

Table Note:
* Missing or Compromised Sample

Radon Testing Results		
Belmont Elementary		
Test Period: 12/21/15-12/24/15		
Kit Number	**QC Type**	**Result**
7713218	D (106)	0.9
7713220	D (139)	0.6
7713209	D (140)	< 0.3
7713253	D (146)	< 0.3
7713207	D (154)	1.6
7713224	FB (101)	< 0.3
7713250	FB (147)	< 0.3
7707329	OB (0)	< 0.3
7707329	OB (0)	< 0.3

Table Note:
* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

January 13, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

BELMONT ELEMENTARY
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7713224	101	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	< 0.3	2015-12-28
7713245	102	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.2 ± 0.3	2015-12-28
7713238	103	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.2 ± 0.3	2015-12-28
7713226	105	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	1.4 ± 0.3	2015-12-28
7713218	106	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	0.9 ± 0.3	2015-12-28
7713219	106	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	1.2 ± 0.3	2015-12-28
7713244	106	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	1.3 ± 0.3	2015-12-28
7713229	109	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	1.0 ± 0.3	2015-12-28
7713230	109	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	1.6 ± 0.4	2015-12-28
7713214	110	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	1.9 ± 0.4	2015-12-28
7713223	111	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	< 0.3	2015-12-28
7713222	112	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	0.7 ± 0.3	2015-12-28
7713249	113	2015-12-21 @ 10:00 am	2015-12-24 @ 9:00 am	0.8 ± 0.3	2015-12-28
7713217	114	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	1.2 ± 0.3	2015-12-28
7713242	114	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	0.8 ± 0.3	2015-12-28
7713240	115	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	0.7 ± 0.3	2015-12-28
7713237	134	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	0.6 ± 0.3	2015-12-28
7713213	138	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	0.6 ± 0.3	2015-12-28
7713216	139	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	0.9 ± 0.3	2015-12-28
7713220	139	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	0.6 ± 0.3	2015-12-28
7713208	141	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	< 0.3	2015-12-28
7713209	140	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	< 0.3	2015-12-28
7713211	140	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	< 0.3	2015-12-28
7713204	142	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	< 0.3	2015-12-28
7713205	143	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	< 0.3	2015-12-28
7713246	145	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	< 0.3	2015-12-28
7713253	146	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	< 0.3	2015-12-28
7713262	146	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	0.7 ± 0.3	2015-12-28
7713250	147	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	< 0.3	2015-12-28
7713260	147	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	< 0.3	2015-12-28
7713254	148	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	0.9 ± 0.3	2015-12-28
7713257	149	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	0.8 ± 0.3	2015-12-28
7713255	150	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	0.9 ± 0.3	2015-12-28
7713212	151	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	0.9 ± 0.3	2015-12-28
7713202	152	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	0.7 ± 0.3	2015-12-29
7713236	153	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.3 ± 0.3	2015-12-28
7713207	154	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.6 ± 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 13, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

BELMONT ELEMENTARY
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7713210	154	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.3 ± 0.3	2015-12-28
7713203	155	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.6 ± 0.3	2015-12-28
7713206	155	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.5 ± 0.3	2015-12-28
7713251	156	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.1 ± 0.3	2015-12-28
7713258	157	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	< 0.3	2015-12-28
7713261	158	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	< 0.3	2015-12-28
7713259	159	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	0.9 ± 0.3	2015-12-28
7713256	161	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	< 0.3	2015-12-28
7713247	160	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	0.6 ± 0.3	2015-12-28
7713252	162	2015-12-21 @ 10:00 am	2015-12-24 @ 9:00 am	1.0 ± 0.3	2015-12-28
7713215	350	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	< 0.3	2015-12-28
7713248	CONFERENCE ROOM	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.9 ± 0.4	2015-12-28

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

January 13, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

BELMONT ELEMENTARY
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7710308	104	2015-12-21 @ 5:00 pm	2015-12-24 @ 1:00 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 13, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

BELMONT ELEMENTARY
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7707329	0	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	< 0.3	2015-12-28
7713241	101	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	1.6 ± 0.3	2015-12-28
7713201	144	2015-12-21 @ 11:00 am	2015-12-24 @ 9:00 am	< 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

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

December 23, 2015

** LABORATORY ANALYSIS REPORT **

Spike Sample Laboratory Results

Radon test result report for:

MCPS

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

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

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 173224

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

Date Start: 12/18/15 Date Stop: 12/21/15	Date Start: _____ Date Stop: _____
Time Start: 0929 Time Stop: 0929	Time Start: _____ Time Stop: _____
Device No.'s: 7705132, 7706208, 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

M. A. CECIL & ASSOCIATES, INC.
4475 Shannon Way, Port Republic, Maryland 20676 (301) 855-7710
INDUSTRIAL HYGIENE AND ENVIRONMENTAL HEALTH

January 15, 2014

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

Re: Radon Evaluation - Belmont Elementary

Dear Mr. Yarup:

Environmental radon testing has been completed at Belmont Elementary School.

Thirty-one charcoal canisters were placed in various rooms throughout the school. The canisters were placed on December 27, 2013 and retrieved on December 30, 2013.

The detected radon concentrations were below the EPA recommended level of 4.0 pico curies per liter (pCi/l) of air with several exceptions. The detected radon concentrations in Rooms 18, 19, K1, and K2 and the main office, gym, and computer lab were above 4.0pCi/l. Testing locations and results are summarized in the attached table.

Tests should be repeated in the five rooms. Alternatively, radon levels could be determined with long term film dosimeters. Based on those results appropriate response actions should be initiated. The EPA recommends some form of a response action for areas with radon levels for two consecutive tests exceeding the recommended level of 4.0 pCi/l.

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

Sincerely,

Michael A. Cecil, CIH

Belmont Elementary School
Environmental Radon Results
December 27, 2013

Location	Detected Radon Concentration (pCi/l)
Main Office	**4.1**
IMC	2.5
APR	2.9
Gym	**5.9**
Staff Lounge	2.8
Computer Lab	**4.0**
Room K-1	**4.2**
Room K-1 (QC duplicate)	3.8
Room K-2	**5.5**
Room 1	0.6
Room 1 (QC duplicate)	0.6
Room 2	1.0
Room 3	<0.5
Room 4	0.5
Room 5	0.8
Room 6	0.8
Room 7	<0.5
Room 8	<0.5
Room 9	<0.5
Room 10	<0.5
Room 11	1.3
Room 12	1.4
Room 13	2.1
Room 14	2.8
Room 15	2.5
Room 16	2.3
Room 18	**4.4**
Room 19	**4.4**
Room 20	3.6
Room 21	3.5
Room 22	1.5