

School / Facility Radon Testing Report Form

Instructions: Submit one testing report form per-facility per-round of testing. 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.

School Year: **23-24**

Facility:	Emory Grove Center
Address:	18100 Washington Grove Lane
	Gaithersburg, MD 20877

Reason for Testing:	<input checked="" type="checkbox"/> Scheduled Re-Testing (2 or 5-year schedule) <input type="checkbox"/> Clearance Testing (Post-Mitigation) <input type="checkbox"/> System(s) Performance Testing (Post-Mitigation) <input type="checkbox"/> New Construction/Facility
Facility Current Radon Status:	<input checked="" type="checkbox"/> Active Mitigation (2-year regular schedule) <input type="checkbox"/> No Active Mitigation (5-year regular schedule) <input type="checkbox"/> Not Previously Tested
Round of Testing:	<input checked="" type="checkbox"/> Initial Testing -or- <input type="checkbox"/> Follow-up Testing
Testing Status:	<input checked="" type="checkbox"/> No Further Testing Needed -or- <input type="checkbox"/> Follow-Up Testing Required

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

Mitigation -	Facility Radon Status:
<input checked="" type="checkbox"/> Not Required or Considered <input type="checkbox"/> Required (>8.0 -pCi/L) <input type="checkbox"/> Required (≥ 4.0 -pCi/L) <input type="checkbox"/> Consider (≥ 2.0 & <4.0 -pCi/L)	<input checked="" type="checkbox"/> No Change in Status <input type="checkbox"/> Active Mitigation (2-year regular schedule) <input type="checkbox"/> No Active Mitigation (5-year regular schedule)

Detector and Deployment

Detector/Device Type:	<input checked="" type="checkbox"/> Passive	<input checked="" type="checkbox"/> Charcoal Absorption (CAD)	<input type="checkbox"/> Alpha Track (ATD)	<input type="checkbox"/> Other
	<input type="checkbox"/> Continuous	<input type="checkbox"/> Electret ion Chamber (EIC)	<input type="checkbox"/> Electronic Integration (EID)	
<i>Other—Specify here:</i>				
Detector/Device Name:	Air Chek – Radon Test Kits			
Manufacturer:	Radon Lab			
Person(s) Deploying or Retrieving Test Devices and certification number			Organization/Company	
Evy Rahmey			KCI Technologies, Inc.	
<i>If noncertified individuals, the qualified measurement professional providing oversight -</i>				
Tyler McCleaf, CSP – Cert. #111004			KCI Technologies, Inc.	

Testing

<input checked="" type="checkbox"/> Short-Term	Length of Test (days):	3	Date of Deployment and Retrieval (mm/dd/yy):	02/13/2024
<input type="checkbox"/> Long-Term				02/16/2024
Does the test period include weekends, school breaks or holidays?				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<i>If "Yes" please explain/detail in the space below:</i>				
Was HVAC operating under occupied conditions?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<i>If "No" please explain/detail in the space below:</i>				

Testing (continued)

	Detectors Deployed		
	Ground-Contact	Upper-Level(s)	Total
Test Locations ¹	50	0	50
Duplicates ²	5	0	5
Field Blanks ³	2	0	2
Grand Total			57

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.

Spike Samples ¹	6	Trip Blank(s) ²	1	Office Blank(s) ^{3,4}	1
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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.

Spike Sample Lab Results. Measured values are satisfactory, i.e., within ± 25% of the chamber's reference value.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Quality Control measurements comply with QA/QC requirements in the QA plan previously submitted?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Quality Assurance / Quality Control (QA/QC) (continued)

If “No” to either, please describe any QC measurements that were missing or outside of control tolerances established in the QAP here:

Summary of Test Results¹ and Determination of Valid Measurements²

	Ground-Contact	Upper-Level(s)	Total
Number of test locations:	50	0	50
Number of locations ≥ 8.0 -pCi/L:	0	0	0
Number of locations ≥ 4.0 and ≤ 8 -pCi/L:	0	0	0
Number of locations ≥ 2.7 and ≤ 4 -pCi/L:	0	0	0
Number of locations ≥ 2.0 and ≤ 4 -pCi/L:	1	0	0
Number of missing required test locations ³ :	0	0	0
Percentage of missing test locations for the facility ^{4,5} :	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 $\leq 33\%$. 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 $\leq 25\%$ 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 Results¹ and Determination of Valid Measurements² (continued)

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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<i>If Yes to both above – then Testing Status – ‘No Further Testing Needed’ mark ‘NA’ below and complete Conclusions section</i>	
If No to either above , were all results obtained under 4.0-pCi/L and were there sufficient valid measurements obtained? ^{1,2} <i>If Yes – then Testing Status - ‘No Further Testing Needed’ complete Conclusion section</i> <i>If No, then Testing Status - ‘Follow-up Testing Required’ continue below</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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.

- **If ‘No Further Testing Needed’** complete conclusions section on first page.
- **If ‘Follow-up Testing Required’** – complete Follow-up Testing described below and the conclusion section on the first page for only the valid measurements/results obtained

Follow-Up Testing (if required)

Required if –

- 1- Not enough valid results were obtained from a facility (table above);
- 2- Any results ≥ 4.0 – pCi/L; and
- 3- At the discretion of MCPS IAQ Staff

Follow-up Testing:

- 1- If an insufficient number of valid measurements obtained during initial round:
 - return to facility to test locations that require valid measurements
- 2- Follow-up Testing for valid measurements ≥ 4.0-pCi/L

Initial Result(s)	Procedure	Follow-up Result	Conclusion
≥ 4.0-pCi/L	1- Short-term follow-up test 2- Average the results of the two tests	≥4.0	Mitigation Required
		<4.0 but >2.0	Consider Mitigation
		<2.0	Not Required or Considered

- **Complete second School/Facility Radon Testing Report Form for only Follow-up Testing locations.**

Attachment 1:
Summary Data Tables

Table 1- Radon Testing Results**Emory Grove Center****Test Period: 02/13/2024 - 02/16/2024**

Kit Number	Room / Area	Result
11477922	100	< 0.3
11477793	101	< 0.3
11477796	102	< 0.3
11477800	102	< 0.3
11477795	103	< 0.3
11477792	104	< 0.3
11477799	105	< 0.3
11477970	106	< 0.3
11477986	106	< 0.3
11477943	113	1.6
11477963	115	0.8
11477977	118	1.1
11477978	120	1.9
11477950	122	1.0
11477969	123	0.6
11477956	124	< 0.3
11477972	124	0.8
11477964	125	< 0.3
11477975	125	1.6
11477991	125	1.9
11477962	126	< 0.3
11477985	129	1.4
11477983	131	1.3
11477980	133	0.8
11477988	133	< 0.3
11477789	134	< 0.3
11477954	135	< 0.3
11477955	135	< 0.3
11477939	136	< 0.3
11477921	139	< 0.3
11477947	140	< 0.3
11477928	141	< 0.3
11477946	143	< 0.3
11477930	144	< 0.3
11477953	145	< 0.3
11477787	146	2.3
11477952	147	< 0.3
11477929	100A	< 0.3
11477794	100B	< 0.3
11477791	100C	< 0.3
11477798	100F	0.5
11477923	100G	< 0.3
11477797	100H	< 0.3

Table 1- Radon Testing Results		
Emory Grove Center		
Test Period: 02/13/2024 - 02/16/2024		
Kit Number	Room / Area	Result
11477979	106 STAGE	< 0.3
11477993	110 OFFICE	1.9
11477994	124A	1.1
11477959	132A	< 0.3
11477961	132B	< 0.3
11477971	133B	0.5
11477936	135D	< 0.3
11477960	135D	< 0.3
11477780	136B	< 0.3
11477790	136B	< 0.3
11477937	136B	< 0.3
11477788	136C	< 0.3
11477938	136D	< 0.3
11477945	140B	< 0.3

Table 3 - QC Radon Testing Results			
Emory Grove Center			
Test Period: 02/13/2024 - 02/16/2024			
Kit Number	QC Type	Room / Area	Result
11477796	D	102	< 0.3
11477975	D	125	1.6
11477964	FB	125	< 0.3
11477988	D	133	< 0.3
11477960	D	135D	< 0.3
11477937	D	136B	< 0.3
11477790	FB	136B	< 0.3
11284674	OB	OFFICE BLANK	< 0.3
11285521	TB	TRAVEL BLANK	< 0.3

Attachment 2:
Laboratory Reports

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11477922	100	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477929	100A	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477794	100B	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477791	100C	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477798	100F	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	0.5 ± 0.3	2024-02-20
11477923	100G	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477797	100H	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477793	101	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477800	102	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477796	102	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477795	103	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477792	104	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477799	105	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477970	106	2024-02-13 @ 11:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477986	106	2024-02-13 @ 11:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477979	106 STAGE	2024-02-13 @ 11:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477993	110 OFFICE	2024-02-13 @ 11:00 am	2024-02-16 @ 9:00 am	1.9 ± 0.4	2024-02-20
11477943	113	2024-02-13 @ 11:00 am	2024-02-16 @ 9:00 am	1.6 ± 0.4	2024-02-20
11477963	115	2024-02-13 @ 11:00 am	2024-02-16 @ 9:00 am	0.8 ± 0.3	2024-02-20
11477977	118	2024-02-13 @ 11:00 am	2024-02-16 @ 9:00 am	1.1 ± 0.3	2024-02-20
11477978	120	2024-02-13 @ 11:00 am	2024-02-16 @ 9:00 am	1.9 ± 0.4	2024-02-20
11477950	122	2024-02-13 @ 11:00 am	2024-02-16 @ 9:00 am	1.0 ± 0.3	2024-02-20
11477969	123	2024-02-13 @ 11:00 am	2024-02-16 @ 9:00 am	0.6 ± 0.3	2024-02-20
11477956	124	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477972	124	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	0.8 ± 0.3	2024-02-20
11477994	124A	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	1.1 ± 0.4	2024-02-20
11477975	125	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	1.6 ± 0.4	2024-02-20
11477991	125	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	1.9 ± 0.4	2024-02-20
11477964	125	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477962	126	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477985	129	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	1.4 ± 0.4	2024-02-20
11477983	131	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	1.3 ± 0.4	2024-02-20
11477959	132A	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477961	132B	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477988	133	2024-02-13 @ 11:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477980	133	2024-02-13 @ 11:00 am	2024-02-16 @ 9:00 am	0.8 ± 0.3	2024-02-20
11477971	133B	2024-02-13 @ 11:00 am	2024-02-16 @ 9:00 am	0.5 ± 0.3	2024-02-20

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11477789	134	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477955	135	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477954	135	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477960	135D	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477936	135D	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477939	136	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477780	136B	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477790	136B	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477937	136B	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477788	136C	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477938	136D	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477921	139	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477947	140	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477945	140B	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477928	141	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477946	143	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477930	144	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477953	145	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11477787	146	2024-02-13 @ 9:00 am	2024-02-16 @ 9:00 am	2.3 ± 0.4	2024-02-20
11477952	147	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20

February 20, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
OFFICE BLANK
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11284661	OB	2024-02-12 @ 10:00 am	2024-02-15 @ 11:00 am	< 0.3	2024-02-20
11284674	OB	2024-02-13 @ 10:00 am	2024-02-16 @ 11:00 am	< 0.3	2024-02-20

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

February 20, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
TRAVEL BLANK
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11284664	TB	2024-02-12 @ 10:00 am	2024-02-15 @ 11:00 am	< 0.3	2024-02-20
11285521	TB	2024-02-13 @ 10:00 am	2024-02-16 @ 11:00 am	< 0.3	2024-02-20

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

January 29, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
STORAGE
KCI

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11635097	Storage	2024-01-07 @ 9:00 am	2024-01-11 @ 9:00 am	< 0.3	2024-01-15

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 213819

NOMINAL Conditions: Radon Conc 50.0 pCi/L Rel. Hum 28.9 % Temp. 69.1 F

Date Start: 2/23/24 Date Stop: 2/26/24 Date Start: _____ Date Stop: _____

Time Start: 0812 Time Stop: 0812 Time Start: _____ Time Stop: _____

Device No.'s: (6) CHAR BAGS Device No.'s: _____

11478400, 11477842, 11477845, _____

11477852, 11477996, 11477999 _____

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 μ R/h Elevation = 820 ft

March 1, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

FEB SK

MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11477842	NA	2024-02-23 @ 8:00 am	2024-02-26 @ 8:00 am	50.3 ± 4.0	2024-03-01
11477845	NA	2024-02-23 @ 8:00 am	2024-02-26 @ 8:00 am	55.3 ± 4.4	2024-03-01
11477852	NA	2024-02-23 @ 8:00 am	2024-02-26 @ 8:00 am	49.4 ± 4.0	2024-03-01
11477996	NA	2024-02-23 @ 8:00 am	2024-02-26 @ 8:00 am	49.8 ± 4.0	2024-03-01
11477999	NA	2024-02-23 @ 8:00 am	2024-02-26 @ 8:00 am	55.4 ± 4.4	2024-03-01
11478400	NA	2024-02-23 @ 8:00 am	2024-02-26 @ 8:00 am	47.0 ± 3.8	2024-03-01

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Testing February 13th – February 16th 2024

Name of Schools:

1. Blair G. Ewing Center (At Avery Rd)
2. Grosvenor Center
3. Emory Grove Center
4. Radnor Center

	Date	Initials
Radon Test Kits Deployed	02/13/2024	JM
Radon Test Kits Collected	02/16/2024	JM
Radon Test Kits Shipped to Lab*	02/16/2024	JM
Radon Test Kits Received by Lab*	02/20/2024	JM

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

Attachment 3:
Sampling Location Map



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Emory Grove Center
Date of Test Report	1/25/2023
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	2
# Rooms ≥ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	0.7 pCi/L

Project Status:

1. Post mitigation testing completed.



January 25, 2023

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

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

Location: Emory Grove Center
18100 Washington Grove Lane
Gaithersburg, MD 20877

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 Emory Grove Center located at 18100 Washington Grove Ln. Gaithersburg, MD 20877 (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 December 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.

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 December 27, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Accustar Labs - MA for analysis by gamma-ray spectroscopy.

Accustar Labs - MA is a NRSB certified analytical laboratory for radon analysis (certification #ARL0017) located at 2 Saber Way, Ward Hill, MA 01835.

Evaluation of Testing Conditions:

These tests represent:

- Follow up to post mitigation biennial testing.

These tests were conducted to:

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

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate temperatures ranged from 23°F to 55°F. Maximum sustained winds ranged from 0-18 miles per hour. Average humidity was around 75% with 0.0 inches of precipitation (rain) was recorded during testing period.

Results:

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

The results of the radon test analysis indicated the following:

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

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

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

Sincerely,



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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Check, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

OC- Quality Control

Table 1- Radon Testing Results		
Emory Grove Center		
Test Period: 12/22/2022 - 12/27/2022		
Kit Number	Room / Area	Result
11288190	GYM	0.6
11288198	GYM	0.7
11288189	GYM STORAGE	< 0.3
11288196	GYM STORAGE	0.5

Table 2- Radon Testing Results			
Emory Grove Center			
Test Period: 12/22/22 - 12/27/22			
Kit Number	QC Type	Room / Area	Result
11288198	D	Gym	0.7
11288189	FB	Gym Storage	< 0.3
11288518	OB	OFFICE BLANK	< 0.3
11287685	TB	TRAVEL BLANK	< 0.3

ATTACHMENT C

Laboratory Analytical Results

December 29, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11288190	GYM	2022-12-22 @ 12:00 pm	2022-12-28 @ 11:00 am	0.6 ± 0.3	2022-12-29
11288198	GYM	2022-12-22 @ 12:00 pm	2022-12-28 @ 11:00 am	0.7 ± 0.3	2022-12-29
11288189	GYM STORAGE	2022-12-22 @ 12:00 pm	2022-12-28 @ 11:00 am	< 0.3	2022-12-29
11288196	GYM STORAGE	2022-12-22 @ 12:00 pm	2022-12-28 @ 11:00 am	0.5 ± 0.3	2022-12-29

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 KC1 TECHNOLOGIES, INC Job Number 208343

NOMINAL Conditions: Radon Conc 34.7 pCi/L Rel. Hum 49.4 % Temp. 69.6 F

Date Start: 12/24/22 Date Stop: 12/27/22 Date Start: _____ Date Stop: _____

Time Start: 0810 Time Stop: 0810 Time Start: _____ Time Stop: _____

Device No.'s: (5) CHAR BAGS - Device No.'s: _____

11285109, 11285110, 11285101

THRU 11285103

BY LEFT

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

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

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

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

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

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

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

December 29, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

OFFICE

MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11285110	SK1	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	31.7 ± 2.5	2022-12-29
11285101	SK2	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	30.1 ± 2.4	2022-12-29
11285103	SK3	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	34.0 ± 2.7	2022-12-29
11285102	SK4	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	30.9 ± 2.5	2022-12-29
11285109	SK5	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	32.0 ± 2.6	2022-12-29

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Week 3 December Schools

Name of Schools:

1. Emory Grove Center

	Date	Initials
Radon Test Kits Deployed	12/22/2022	BMM
Radon Test Kits Collected	12/27/2022	BMM
Radon Test Kits Shipped to Lab*	12/27/2022	BMM
Radon Test Kits Received by Lab*	12/29/2022	BMM

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



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Emory Grove Center
Date of Test Report	05/27/2022
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	3
# Rooms \geq 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.7 pCi/L

Project Status

Current Project Status at this time: Testing completed; no further action needed; Mitigation needed - Room 135 (Gymnasium)



May 27, 2022

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

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

Location: Emory Grove Center
18100 Washington Grove Lane
Gaithersburg, MD 20877

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 Emory Grove Center, located at 18100 Washington Grove Lane, Gaithersburg, MD 20877 (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 28, 2022 and deployed six (6) 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 pCi/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 31, 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 pCi/L	None	N/A
<4.0 pCi/L	See Attachment B	

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

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

Sincerely,



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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Check, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

OC- Quality Control

Table 1- Radon Testing Results		
Emory Grove Center RT		
Test Period: 03/28/2022 - 03/31/2022		
Kit Number	Room / Area	Result
11139822	135	1.5
11139825	135	1.7
11139815	139	< 0.3
11139834	139	< 0.3
11139823	141	< 0.3
11139828	141	< 0.3

Table 2- Radon Testing Results			
Emory Grover Center RT			
Test Period: 03/28/2022 - 03/31/2022			
Kit Number	QC Type	Room / Area	Result
11139828	D	141	< 0.3
11139815	FB	139	< 0.3
11139883	OB	OFFICE BLANK	< 0.3
11139841	TB	TRAVEL BLANK	< 0.3

ATTACHMENT C

Laboratory Analytical Results

April 4, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
EMORY GROVE CENTER
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11139822	135	2022-03-28 @ 12:00 pm	2022-03-31 @ 11:00 am	1.5 ± 0.3	2022-04-04
11139825	135	2022-03-28 @ 12:00 pm	2022-03-31 @ 11:00 am	1.7 ± 0.3	2022-04-04
11139815	139	2022-03-28 @ 12:00 pm	2022-03-31 @ 11:00 am	< 0.3	2022-04-04
11139834	139	2022-03-28 @ 12:00 pm	2022-03-31 @ 11:00 am	< 0.3	2022-04-04
11139823	141	2022-03-28 @ 12:00 pm	2022-03-31 @ 11:00 am	< 0.3	2022-04-04
11139828	141	2022-03-28 @ 12:00 pm	2022-03-31 @ 11:00 am	< 0.3	2022-04-04

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 light

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

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

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

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

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

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

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

March 30, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

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

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

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – March 2022 Schools – Retesting

Name of Schools:

1. Rock Terrace School
2. S. Christa McAuliffe ES
3. Cedar Grove ES
4. DuFief ES
5. Emory Grove Center
6. Gaithersburg ES
7. Gaithersburg MS
8. Jones Lane ES
9. Rachel Carson ES
10. Rosemont ES
11. Shady Grove MS
12. Summit Hall ES
13. Albert Einstein HS
14. Eastern MS
15. Montgomery Blair HS
16. Newport Mill MS
17. Strawberry Knoll ES

	Date	Initials
Radon Test Kits Deployed	03/28/2022	BMM
Radon Test Kits Collected	03/31/2022	BMM
Radon Test Kits Shipped to Lab*	04/01/2022	BMM
Radon Test Kits Received by Lab*	04/04/2022	BMM

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



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Emory Grove Center
Date of Test Report	4/7/2022
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	50
# Rooms \geq 4.0 pCi/L	1
Lowest Value	<0.3 pCi/L
Highest Value	19 pCi/L

Project Status:

Initial testing completed; Missing, Elevated, or compromised samples need re-sampling



April 7, 2022

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

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

Location: Emory Grove Center
18100 Washington Grove Ln.
Gaithersburg, MD 20877

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 Emory Grove Center, located at 18100 Washington Grove Ln. Gaithersburg, MD 20877 (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 22, 2022 and deployed fifty three (53) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

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

KCI returned to the site on February 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 post-mitigation biennial testing.

These tests were conducted to:

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

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

KCI recorded observations of the following conditions in each room 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 pCi/L	135	19
<4.0 pCi/L	See Attachment B	

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

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

Sincerely,



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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Check, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

OC- Quality Control

Table 1- Radon Testing Results		
Emory Grove Center		
Test Period: 02/22/2022 - 02/25/2022		
Kit Number	Room / Area	Result
11123721	100	1.0
11130915	101	< 0.3
11123872	102	< 0.3
11130920	103	< 0.3
11123870	104	< 0.3
11123871	105	< 0.3
11130701	113	0.9
11130711	115	< 0.3
11130928	118	0.7
11130921	120	< 0.3
11130923	122	1.1
11130926	123	1.0
11130929	123	1.0
11130930	123	< 0.3
11130905	124	< 0.3
11130910	124	1.0
11130922	125	2.3
11130924	126	< 0.3
11130902	129	1.6
11130903	131	1.2
11130912	133	< 0.3
11130901	134	< 0.3
11130909	135	1.0
11130918	135	19
11123879	136	< 0.3
11123868	139	< 0.3
11123882	140	< 0.3
11130914	141	< 0.3
11130917	143	< 0.3
11123881	144	1.5
11123873	145	1.0
11123874	145	< 0.3
11130919	146	0.7
11123720	147	< 0.3
11123713	100A	< 0.3
11123723	100B	1.2
11123724	100C	2.1
11123714	100F	< 0.3
11123722	100F	0.8
11123729	100F	1.4
11130916	100G	1.7
11123718	100H	1.4
11130908	110A	< 0.3
11130906	124 OFFICE	1.8
11130904	132A	< 0.3

Table 1- Radon Testing Results		
Emory Grove Center		
Test Period: 02/22/2022 - 02/25/2022		
Kit Number	Room / Area	Result
11123869	132B	< 0.3
11130911	133 OFFICE	< 0.3
11123876	135D	< 0.3
11123875	136B	< 0.3
11130734	136B	< 0.3
11123883	136C	< 0.3
11123880	136D	< 0.3
11123877	140B	< 0.3
11123716	APR	< 0.3
11123717	APR	< 0.3

Table 2- Radon Testing Results			
Emory Grove Center			
Test Period: 02/22/2022 - 02/25/2022			
Kit Number	QC Type	Room / Area	Result
11130926	D	123	1.0
11130930	FB	123	1.0
11123873	D	145	1.0
11123729	D	100f	1.4
11123714	FB	100f	< 0.3
11139384	OB	OFFICE BLANK	< 0.3
11131222	TB	TRAVEL BLANK	< 0.3

ATTACHMENT C

Laboratory Analytical Results

March 3, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
EMORY GROVE LC
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11123717	APR	2022-02-22 @ 9:00 am	2022-02-25 @ 9:00 am	< 0.3	2022-03-03
11123716	APR	2022-02-22 @ 9:00 am	2022-02-25 @ 9:00 am	< 0.3	2022-03-03

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

Radon test result report for:
EMORY GROVE CENTER

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11130916	100G	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	1.7 ± 0.5	2022-03-03
11130915	101	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11130920	103	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11130908	110A	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130701	113	2022-02-22 @ 3:00 pm	2022-02-25 @ 10:00 am	0.9 ± 0.5	2022-03-03
11130711	115	2022-02-22 @ 3:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130928	118	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	0.7 ± 0.4	2022-03-03
11130921	120	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130923	122	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	1.1 ± 0.5	2022-03-03
11130926	123	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	1.0 ± 0.5	2022-03-03
11130930	123	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130929	123	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	1.0 ± 0.5	2022-03-03
11130905	124	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130910	124	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	1.0 ± 0.5	2022-03-03
11130906	124 OFFICE	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	1.8 ± 0.6	2022-03-03
11130922	125	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	2.3 ± 0.5	2022-03-03
11130924	126	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130902	129	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	1.6 ± 0.5	2022-03-03
11130903	131	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	1.2 ± 0.5	2022-03-03
11130904	132A	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130912	133	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130911	133 OFFICE	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130901	134	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130909	135	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	1.0 ± 0.5	2022-03-03
11130918	135	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	19.0 ± 1.5	2022-03-03
11130734	136B	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130914	141	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130917	143	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130919	146	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	0.7 ± 0.5	2022-03-03

Radon test result report for:
EMORY GROVE CENTER

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11123721	100	2022-02-22 @ 3:00 pm	2022-02-25 @ 10:00 am	1.0 ± 0.5	2022-03-03
11123713	100A	2022-02-22 @ 3:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11123723	100B	2022-02-22 @ 3:00 pm	2022-02-25 @ 11:00 am	1.2 ± 0.5	2022-03-03
11123724	100C	2022-02-22 @ 3:00 pm	2022-02-25 @ 11:00 am	2.1 ± 0.5	2022-03-03
11123714	100F	2022-02-22 @ 3:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11123722	100F	2022-02-22 @ 3:00 pm	2022-02-25 @ 11:00 am	0.8 ± 0.5	2022-03-03
11123729	100F	2022-02-22 @ 3:00 pm	2022-02-25 @ 11:00 am	1.4 ± 0.5	2022-03-03
11123718	100H	2022-02-22 @ 3:00 pm	2022-02-25 @ 11:00 am	1.4 ± 0.5	2022-03-03
11123872	102	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11123870	104	2022-02-22 @ 3:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11123871	105	2022-02-22 @ 3:00 pm	2022-02-25 @ 11:00 am	< 0.3	2022-03-03
11123869	132B	2022-02-22 @ 1:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11123876	135D	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11123879	136	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11123875	136B	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11123883	136C	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11123880	136D	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11123868	139	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11123882	140	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11123877	140B	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11123881	144	2022-02-22 @ 2:00 pm	2022-02-25 @ 11:00 am	1.5 ± 0.5	2022-03-03
11123873	145	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	1.0 ± 0.5	2022-03-03
11123874	145	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11123720	147	2022-02-22 @ 2:00 pm	2022-02-25 @ 10:00 am	< 0.3	2022-03-03

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 204186

NOMINAL Conditions: Radon Conc 25.8 pCi/L Rel. Hum 50.1 % 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, 1112998, 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 $\pm 25\%$ 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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – February 2022 Schools

Name of Schools:

1. Dufief ES
2. Emory Grove Center
3. Fields Road ES
4. Forest Oak MS
5. Gaithersburg ES
6. Gaithersburg MS
7. Jones Lane ES
8. Rachel Carson ES
9. Rosemont ES
10. Shady Grove MS
11. Summit Hall ES
12. Washington Grove ES

	Date	Initials
Radon Test Kits Deployed	02/22/2022	PM
Radon Test Kits Collected	02/25/2022	PM
Radon Test Kits Shipped to Lab*	02/25/2022	JM
Radon Test Kits Received by Lab*	02/28/2022	PM

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



**MONTGOMERY COUNTY PUBLIC SCHOOLS
RADON TESTING**

**Executive Summary:
Emory Grove Center**

18100 Washington Grove Lane
Gaithersburg, MD 20877

Date of Test Report:	3/15/2019
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
# of Rooms \geq 4.0 pCi/L:	0
Low Value:	1.0
High Value:	1.0

Project Status

Retesting completed: No further action at this time.



March 15, 2019

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

Re: Radon Testing Services

Location: Emory Grove Center
18100 Washington Grove Lane,
Gaithersburg, MD 20877

Dear Mr. Cox:

Intertek-PSI (PSI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) for completion of a “short-term” 3-day radon test for Emory Grove Center, located at 18100 Washington Grove Lane, Gaithersburg, MD 20877 (subject site).

Scope of Services:

PSI 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. PSI 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 #14SS007) 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.

PSI visited the site on February 26, 2019 and deployed one (1) activated charcoal (AC) radon test kit. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on March 01, 2019 to retrieve the radon sampling test kit. A floor plan map of the building with the test location is included as Attachment A of this report.

PSI shipped all radon tests via overnight delivery to AccuStar Labs for analysis by gamma-ray spectroscopy. Accustar Labs is a NRSB certified analytical laboratory for radon analysis located at 929 Mount Zion Road, Lebanon, Pennsylvania (certification # ARL0007).

Evaluation of Testing Conditions:

The operating condition that represents the greatest amount of significantly occupied time for this building is; heating active, with outdoor temperature averages $\leq 65^{\circ}\text{F}$.

PSI 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.



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

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

Results:

The results of the radon test analysis indicated the following:

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

Notes:
D -Duplicate Sample

The office blank and lab transit blanks had test results of less than the laboratory detection limit of 0.4 pCi/L. Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved. The Spike sample analysis results indicate the laboratory is operating within statistical control limits.

The sampling locations, field observations, and analytical results are listed on Table 1 (Attachment B). The laboratory analytical results are also attached (Attachment C).

Laboratory results and exposure data for the spike samples are also included in Attachment C. Our professional services have been performed in accordance with customary principles and practices in the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at (703) 698-9300.

ATTACHMENT B

Radon Test Summary Spreadsheet

Radon Testing Results		
Emory Grove Center		
Testing period: 2/26/19 - 3/01/19		
Kit Number	Room / Area	Result (pCi/L)
3923325	115A	1.0

Table Notes:

D – Duplicate

FB – Field Blank

OB – Office Blank

TB – Transit Blank

QC – Quality Control

ATTACHMENT C

Laboratory Analytical Results

NRPP 105011 AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)
2930 Eskridge Road
Fairfax VA 22031

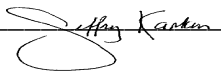
MCPS Radon Survey Emory Grove Center
18100 Washington Grove Lane
Gaithersburg MD 20877

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
3220807	3923325	02/26/2019 1:50 pm 03/01/2019 11:55 am	Floor Main Level Room 115A	1.0

Comment: A copy of this report was e-mailed to Intertek-PSI (VA)

Distributed by: Intertek-PSI (VA)

Date Received: 03/05/2019 Date Logged: 03/05/2019 Date Analyzed: 03/05/2019 Date Reported: 03/06/2019

Report Reviewed By: 

Report Approved By: 

Disclaimer:

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

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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



MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

Executive Summary: Emory Grove Center

18100 Washington Grove Lane
Gaithersburg, MD 20877

Date of Test Report:	2/2/2019
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:	49
# of Rooms \geq 4.0 pCi/L:	0
Low Value:	<0.4
High Value:	3.8

Project Status

Initial testing complete: Missing or compromised samples need re-test.



February 2, 2019

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

Re: Radon Testing Services

Location: Emory Grove Center
18100 Washington Grove Lane,
Gaithersburg, MD 20877

Dear Mr. Cox:

Intertek-PSI (PSI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) for completion of a "short-term" 3-day radon test for Emory Grove Center, located at 18100 Washington Grove Lane, Gaithersburg, MD 20877 (subject site).

Scope of Services:

PSI 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. PSI 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 #14SS007) 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.

PSI visited the site on December 3, 2018 and deployed sixty-two (62) activated charcoal (AC) radon test kits. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on December 6, 2018 to retrieve the radon sampling test kits. A floor plan map of the building with the test locations is included as Attachment A of this report.

As a quality control measure, PSI included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, PSI submitted ten (10) 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.

PSI shipped all radon tests via overnight delivery to AccuStar Labs for analysis by gamma-ray spectroscopy. Accustar Labs is a NRSB certified analytical laboratory for radon analysis located at 929 Mount Zion Road, Lebanon, Pennsylvania (certification # ARL0007) and 2 Saber Way, Haverhill, Massachusetts (certification # ARL0017).



Evaluation of Testing Conditions:

The operating condition that represents the greatest amount of significantly occupied time for this building is; heating active, with outdoor temperature averages $\leq 65^{\circ}\text{F}$.

PSI 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.

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

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

Results:

The results of the radon test analysis indicated the following:

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

Notes:

D -Duplicate Sample

The office blank and lab transit blanks had test results of less than the laboratory detection limit of 0.4 pCi/L. Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved. The Spike sample analysis results indicate the laboratory is operating within statistical control limits.

The sampling locations, field observations, and analytical results are listed on Table 1 (Attachment B). The laboratory analytical results are also attached (Attachment C).

Laboratory results and exposure data for the spike samples are also included in Attachment C. Our professional services have been performed in accordance with customary principles and practices in the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at (703) 698-9300.



Respectfully Submitted,

INTERTEK-PSI

A handwritten signature in black ink that reads "Nand Kaushik". The signature is written in a cursive, flowing style.

Nand Kaushik, P.E.
Department Manager, Environmental Services
Nand.Kaushik@intertek.com

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

ATTACHMENT B

Radon Test Summary Spreadsheet

Radon Testing Results		
Emory Grove Center		
Testing period: 12/3/18 - 12/6/18		
Kit Number	Room / Area	Result (pCi/L)
3918533	100A	1.6
3918534	100B	1.5
3918535	100C	1.8
3918536	100E	2.0
3918537	100F	1.5
3918538	101	0.5
3918539	102	0.4
3918540	103	<0.4
3918461	104	0.6
3918463	105	<0.4
3918345	110A	1.5
3888410	115A (MISSING)	--
3918358	115	0.9
3918347	118	0.9
3918349	120	1.4
3918357	122	1.4
3918311	124A	0.7
3918348	125	3.8
3918314	126A	0.9
3918813	126	0.8
3918350	129	1.8
3918355	131	1.1
3918529	132	<0.4
3918524	132A	<0.4
3918344	133	0.9
3918304	133B	0.7
3918465	134	0.5
3917530	135D	0.6
3918301	135F	0.7
3918466	136	0.4
3918469	136B	<0.4
3918468	136C	<0.4
3918467	136D	0.4
3918521	139	1.2
3918522	139 A/B	<0.4
3918523	140	<0.4
3918312	140A	<0.4
3918525	141	<0.4
3918526	141A	<0.4
3918527	142	<0.4
3918528	143	<0.4
3918464	144	0.7
3918360	APR (106)	0.4

Radon Testing Results		
Emory Grove Center		
Testing period: 12/3/18 - 12/6/18		
Kit Number	Room / Area	Result (pCi/L)
3918323	APR (106)	<0.4
3918346	FACP	0.9
3918531	General Office (100)	1.4
3917528	Gym (135)	0.5
3917529	Gym (135)	0.6
3917526	IMC (124)	0.7
3917527	IMC (124)	0.8
3918532	Kitchen (110)	1.4
3918359	Staff Lounge (113)	1.4

Radon Testing Results		
Emory Grove Center		
Testing period: 12/3/18 - 12/6/18		
Kit Number	QC Type	Result (pCi/L)
3918462	104 (D)	0.6
3918356	131 (D)	1.4
3918530	132 (D)	<0.4
3918331	135D (D)	0.6
3918470	136B (D)	<0.4
3918321	Kitchen (110) (D)	1.2
3927676	Field Blank	<0.4
3927608	Field Blank	<0.4
3927652	Office Blank	<0.4
3918308	Transit Blank	<0.4

Table Notes:

D – Duplicate

FB – Field Blank

OB – Office Blank

TB – Transit Blank

QC – Quality Control

ATTACHMENT C

Laboratory Analytical Results

NRPP 105011 AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)
2930 Eskridge Road
Fairfax VA 22031

MCPS Radon Survey Emory Grove Center
Not Indicated
Gaithersburg MD 20877

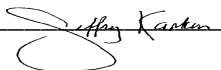
Log Number	Device Number	Test Exposure	Duration:	Area Tested	Result pCi/L
3201761	3918357	12/03/2018 1:31 pm	12/06/2018 12:52 pm	Floor First Room 122	1.4
3201762	3918311	12/03/2018 1:18 pm	12/06/2018 12:39 pm	Floor First Room 124A	0.7
3201763	3918523	12/03/2018 12:51 pm	12/06/2018 12:21 pm	Floor First Room 140	0.4
3201764	3918813	12/03/2018 1:14 pm	12/06/2018 12:35 pm	Floor First Room 126	0.8
3201765	3918538	12/03/2018 12:36 pm	12/06/2018 12:06 pm	Floor First Room 101	0.5
3201766	3918345	12/03/2018 1:23 pm	12/06/2018 12:44 pm	Floor First Room 110A	1.5
3201767	3918536	12/03/2018 12:34 pm	12/06/2018 12:04 pm	Floor First Room 100E	2.0
3201768	3918347	12/03/2018 1:25 pm	12/06/2018 12:46 pm	Floor First Room 118	0.9
3201769	3918468	12/03/2018 12:46 pm	12/06/2018 12:16 pm	Floor First Room 136C	< 0.4
3201770	3918356	12/03/2018 1:29 pm	12/06/2018 12:51 pm	Floor First Room 131 Duplicate	1.4
3201771	3918532	12/03/2018 1:22 pm	12/06/2018 12:43 pm	Floor First Room Kitchen (110)	1.4


Comment: AMENDED REPORT on 1-8-19 to add correct dates and times for 3918314 and 3927652.

Test Performed By: Rinzo Renthlei

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged: 12/07/2018 Date Analyzed: 12/08/2018 Date Reported: 12/19/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

Disclaimer:

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NRPP 105011 AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)
2930 Eskridge Road
Fairfax VA 22031

MCPS Radon Survey Emory Grove Center
Not Indicated
Gaithersburg MD 20877

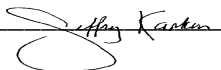
Log Number	Device Number	Test Exposure	Duration:	Area Tested	Result pCi/L
3201772	3918533	12/03/2018 12:31 pm	12/06/2018 12:01 pm	Floor First Room 100A	1.6
3201773	3918527	12/03/2018 12:55 pm	12/06/2018 12:25 pm	Floor First Room 142	< 0.4
3201774	3918331	12/03/2018 1:11 pm	12/06/2018 12:33 pm	Floor First Room 135D Duplicate	0.6
3201775	3918531	12/03/2018 12:30 pm	12/06/2018 12:00 pm	Floor First Room General Office (100)	1.4
3201776	3918465	12/03/2018 12:43 pm	12/06/2018 12:13 pm	Floor First Room 134	0.5
3201777	3918522	12/03/2018 12:50 pm	12/06/2018 12:20 pm	Floor First Room 139B/A	< 0.4
3201778	3918358	12/03/2018 1:32 pm	12/06/2018 12:53 pm	Floor First Room 115	0.9
3201779	3917529	12/03/2018 1:10 pm	12/06/2018 12:31 pm	Floor First Room Gym (135)	0.6
3201780	3918525	12/03/2018 12:53 pm	12/06/2018 12:23 pm	Floor First Room 141	< 0.4
3201781	3917527	12/03/2018 1:17 pm	12/06/2018 12:38 pm	Floor First Room IMC (124)	0.8
3201782	3918467	12/03/2018 12:45 pm	12/06/2018 12:15 pm	Floor First Room 136D	0.4


Comment: AMENDED REPORT on 1-8-19 to add correct dates and times for 3918314 and 3927652.

Test Performed By: Rinzo Renthlei

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged: 12/07/2018 Date Analyzed: 12/08/2018 Date Reported: 12/19/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NRPP 105011 AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)
2930 Eskridge Road
Fairfax VA 22031

MCPS Radon Survey Emory Grove Center
Not Indicated
Gaithersburg MD 20877

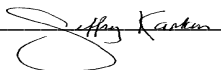
Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
3201783	3918463	12/03/2018 12:41 pm - 12/06/2018 12:11 pm	Floor First Room 105	< 0.4
3201784	3918301	12/03/2018 1:13 pm - 12/06/2018 12:34 pm	Floor First Room 135F	0.7
3201785	3918540	12/03/2018 12:38 pm - 12/06/2018 12:08 pm	Floor First Room 103	< 0.4
3201786	3918539	12/03/2018 12:37 pm - 12/06/2018 12:07 pm	Floor First Room 102	0.4
3201787	3918530	12/03/2018 1:06 pm - 12/06/2018 12:28 pm	Floor First Room 132 Duplicate	< 0.4
3201788	3918464	12/03/2018 12:42 pm - 12/06/2018 12:12 pm	Floor First Room 144	0.7
3201789	3918360	12/03/2018 1:35 pm - 12/06/2018 12:56 pm	Floor First Room APR (106)	0.4
3201790	3918304	12/03/2018 1:20 pm - 12/06/2018 12:41 pm	Floor First Room 133B	0.7
3201791	3918534	12/03/2018 12:32 pm - 12/06/2018 12:02 pm	Floor First Room 100B	1.5
3201792	3918535	12/03/2018 12:33 pm - 12/06/2018 12:03 pm	Floor First Room 100C	1.8
3201793	3918314	12/03/2018 1:15 pm - 12/06/2018 12:36 pm	First Floor Room 126A	0.9


Comment: AMENDED REPORT on 1-8-19 to add correct dates and times for 3918314 and 3927652.

Test Performed By: Rinzo Renthlei

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged: 12/07/2018 Date Analyzed: 12/08/2018 Date Reported: 12/19/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NRPP 105011 AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)
2930 Eskridge Road
Fairfax VA 22031

MCPS Radon Survey Emory Grove Center
Not Indicated
Gaithersburg MD 20877

Log Number	Device Number	Test Exposure	Duration:	Area Tested	Result pCi/L
3201794	3918521	11/27/2018	1:38 pm 11/30/2018 10:00 am	First Floor Room 139	1.2
3201795	3918321	12/03/2018	1:20 pm 12/06/2018 12:42 pm	Floor First Room Kitchen (110) Duplicate	1.2
3201796	3918323	12/03/2018	1:36 pm 12/06/2018 12:57 pm	Floor First Room APR (106)	< 0.4
3201797	3918528	12/03/2018	1:05 pm 12/06/2018 12:26 pm	Floor First Room 143	< 0.4
3201798	3918312	12/03/2018	12:52 pm 12/06/2018 12:22 pm	Floor First Room 140A	< 0.4
3201799	3918461	12/03/2018	12:39 pm 12/06/2018 12:09 pm	Floor First Room 104	0.6
3201800	3927652	12/03/2018	6:00 am 12/06/2018 6:00 pm	Floor NA Room Office Blank	< 0.4
3201801	3918470	12/03/2018	12:48 pm 12/06/2018 12:18 pm	Floor First Room 136B Duplicate	< 0.4
3201802	3918469	12/03/2018	12:47 pm 12/06/2018 12:17 pm	Floor First Room 136B	< 0.4
3201803	3918349	12/03/2018	1:27 pm 12/06/2018 12:48 pm	Floor First Room 120	1.4
3201804	3918350	12/03/2018	1:28 pm 12/06/2018 12:49 pm	Floor First Room 129	1.8

Comment: AMENDED REPORT on 1-8-19 to add correct dates and times for 3918314 and 3927652.

Test Performed By: Rinzo Renthlei

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged: 12/07/2018 Date Analyzed: 12/08/2018 Date Reported: 12/19/2018

Report Reviewed By: 

Report Approved By: 

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NRPP 105011 AL
NRSB ARL0007

EPA Method #402-R-92-004
Charcoal Canister
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Intertek-PSI (VA)
2930 Eskridge Road
Fairfax VA 22031

MCPS Radon Survey Emory Grove Center
Not Indicated
Gaithersburg MD 20877

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
3201805	3918462	12/03/2018 12:39 pm - 12/06/2018 12:10 pm	Floor First Room 104 Duplicate	0.6
3201806	3917526	12/03/2018 1:16 pm - 12/06/2018 12:37 pm	Floor First Room IMC (124))	0.7
3201807	3918537	12/03/2018 12:35 pm - 12/06/2018 12:05 pm	Floor First Room 100F	1.5
3201808	3918355	12/03/2018 1:29 pm - 12/06/2018 12:50 pm	Floor First Room 131	1.1
3201809	3918524	12/03/2018 1:08 pm - 12/06/2018 12:29 pm	Floor First Room 132A	< 0.4
3201810	3917530	12/03/2018 1:11 pm - 12/06/2018 12:32 pm	Floor First Room 135D	0.6
3201811	3917528	12/03/2018 1:09 pm - 12/06/2018 12:30 pm	Floor First Room Gym (135)	0.5
3201812	3927608	12/03/2018 12:30 pm - 12/06/2018 1:00 pm	Floor NA Room Field Blank	< 0.4
3201813	3918466	12/03/2018 12:44 pm - 12/06/2018 12:14 pm	Floor First Room 136	0.4
3201814	3918348	12/03/2018 1:26 pm - 12/06/2018 12:47 pm	Floor First Room 125	3.8
3201815	3918359	12/03/2018 1:34 pm - 12/06/2018 12:55 pm	Floor First Room Staff Lounge (113)	1.4

Comment: AMENDED REPORT on 1-8-19 to add correct dates and times for 3918314 and 3927652.

Test Performed By: Rinzo Renthlei

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged: 12/07/2018 Date Analyzed: 12/08/2018 Date Reported: 12/19/2018

Report Reviewed By: 

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NRPP 105011 AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)
2930 Eskridge Road
Fairfax VA 22031

MCPS Radon Survey Emory Grove Center
Not Indicated
Gaithersburg MD 20877

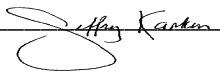
Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
3201816	3918529	12/03/2018 1:06 pm - 12/06/2018 12:27 pm	Floor First Room 132	< 0.4
3201817	3918346	12/03/2018 1:24 pm - 12/06/2018 12:45 pm	Floor First Room FACP	0.9
3201818	3918344	12/03/2018 1:19 pm - 12/06/2018 12:40 pm	Floor First Room 133	0.9
3201819	3918308	12/03/2018 6:00 am - 12/06/2018 6:00 pm	Floor NA Room Transit Blank	< 0.4
3201820	3918526	12/03/2018 12:54 pm - 12/06/2018 12:24 pm	Floor First Room 141A	< 0.4
3201821	3927676	12/03/2018 12:30 pm - 12/06/2018 1:00 pm	Floor NA Room Field Blank	< 0.4

Comment: AMENDED REPORT on 1-8-19 to add correct dates and times for 3918314 and 3927652.

Test Performed By: Rinzo Renthlei

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged: 12/07/2018 Date Analyzed: 12/08/2018 Date Reported: 12/19/2018

Report Reviewed By: 

Report Approved By: 

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NRPP 105011 AL
NRSB ARL0007
Ohio RL41

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

Laboratory Report for:

Property Tested:

Intertek-PSI (VA)
2930 Eskridge Road
Fairfax VA 22031

MCPS Radon Survey
4514 Taylorsville Road
Dayton OH 45424

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
3204125	3926831	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	36.1
3204126	3926832	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.8
3204127	3926833	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	33.7
3204128	3926834	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	35.8
3204129	3926835	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	35.0
3204130	3926836	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.5
3204131	3926837	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.6
3204132	3926838	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.3
3204133	3926839	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	33.2
3204134	3926840	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.0

Comment: A copy of this report was e-mailed to Intertek-PSI (VA)

Test Performed By: Unknown

Distributed by: Intertek-PSI (VA)

Date Received: 12/12/2018 Date Logged: 12/12/2018 Date Analyzed: 12/12/2018 Date Reported: 12/13/2018

Report Reviewed By: 

Report Approved By: 

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EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT Intertek - PSI Job Number 187732

NOMINAL Conditions: Radon Conc 32.6 pCi/L Rel. Hum 49.1 % Temp. 70.1 F

Date Start: 12/7/18 Date Stop: 12/10/18 Date Start: _____ Date Stop: _____

Time Start: 0947 Time Stop: 0947 Time Start: _____ Time Stop: _____

Device No.'s: (10) Char. Cans- Device No.'s: _____

3926831 thru 3926840 _____

G2 left

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

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

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

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

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

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

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



Chain of Custody

Project Name: MCPS Radon Survey 2018

Name of Schools:

- | | |
|--|--------------------------------|
| 1. Ewing Center | 13. Garrett Park ES Annex |
| 2. Department of Food & Nutrition Services | 14. Goshen ES |
| 3. Damascus HS | 15. Kingsley Wilderness Center |
| 4. Edison HS | 16. Kensington Parkwood ES |
| 5. Emory Grove Center | 17. Monocacy ES |
| 6. John Poole MS | 18. Lakewood ES |
| 7. Lakelands Park MS | 19. Little Bennett ES |
| 8. Laytonsville ES | 20. Lois P. Rockwell ES |
| 9. Gaithersburg HS | 21. Olney ES |
| 10. Neelsville MS | 22. North Chevy Chase ES |
| 11. Sequoyah ES | 23. Woodfield ES |
| 12. Clarksburg ES Annex | 24. Wootton HS |

	Date	Initials
Radon Test Kits Deployed	12/03/2018	ML
Radon Test Kits Sampled	12/06/2018	ML
Radon Test Kits Shipped to Lab*	12/06/2018	ML
Radon Test Kits Received by Lab*	12/07/2018; 12/08/2018	ML

*All samples sent to AccuStar Laboratories, 929 Mount Zion Road, Lebanon, PA 17046 and 2 Saber Way, Haverhill, MA 01835



MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Emory Grove Center
Date of Report	February 1, 2018
Round of Testing	Initial Follow-up Post Remediation 2 year testing 5 year testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested	35
# Rooms \geq 4.0 pCi/L	0
Lowest Value	0.6 pCi/L
Highest Value	2.4 pCi/L

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



February 1, 2018

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

Re: Radon Testing Services

KCI Job #1214694182

Location: Emory Grove Center

18100 Washington Grove Lane
Gaithersburg, Maryland 20877

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 Emory Grove Center, located at 18100 Washington Grove Lane in Gaithersburg, Maryland 20877 (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 4, 2017 and deployed forty-two (42) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Appendix A of this report.

As a quality control measure, KCI included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, KCI submitted six (6) test kits to

Bowser-Morner, Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner, Inc. prior to being returned to the laboratory for analysis.

KCI returned to the site on December 7, 2017 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a NRSB certified analytical laboratory for radon analysis (certification #ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

EVALUATION OF TESTING CONDITIONS

These tests represent:

- Post-mitigation biennial testing.

These tests were conducted to:

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

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the high-20s to mid-40s and high temperatures ranged from the low-40s to mid-50s. Maximum sustained winds ranged from 12-17 miles per hour. Average humidity was around 65%. 0.16 Inches of precipitation was recorded during the testing period.

RESULTS

The sampling locations, field observations, and analytical results are listed on Table 1 (Attachment B). The quality control sample locations and analytical results are listed on Table 2 (Attachment B). Missing/compromised tests, missed rooms, and locked rooms are listed on Table 3 (Attachment B). The laboratory

analytical results are included in Attachment C. Laboratory results and exposure data for the spike samples are also included in Attachment C.

The results of the radon test analysis indicated the following:

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

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

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

Sincerely,



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

Attachments:

B- Tables 1-3, Radon Test Summary Spreadsheets

C- Laboratory Analytical Results

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

Radon Testing Results		
Emory Grove Center		
Test Period: 12/04/17-12/07/17		
Kit Number	Room / Area	Result
7985948	100	1.4
7985949	101	0.7
7985954	102	0.9
7985931	103	0.8
7985936	104	0.6
7985939	105	0.8
7985912	113	1.1
7985911	115	1.0
7985914	118	1.7
7985905	120	1.7
7985916	122	2.1
7985934	124	1.1
7985955	124	1.3
7985913	125	1.4
7985918	126	1.3
7985910	129	2.4
7985917	131	1.2
7985904	132	1.4
7985902	133	1.3
7985928	134	0.8
7985903	135	1.0
7985926	135	1.3
7985922	139	0.8
7985923	140	1.1
7985921	141	0.8
7985920	144	1.3
7985946	100A	1.2
7985933	100B	1.3
7985937	100C	1.3
7985935	100E	1.6
7985938	100F	1.5
7985941	100G	1.9
7985947	100H	1.8
7985927	124A	1.2
7985919	132A	2.1
7985929	* 136 (Missing)	-
7985915	APR	1.1
7985901	APR	1.5

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Emory Grove Center		
Test Period: 12/04/17-12/07/17		
Kit Number	QC Type	Result
7985924	D (135)	0.8
7985932	D (140)	0.7
7985930	FB (140)	< 0.3
7979378	OB (OFFICE BLANK)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:
EMORY GROVE CENTER
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7985948	100	2017-12-04 @ 11:00 am	2017-12-07 @ 11:00 am	1.4 ± 0.3	2017-12-11
7985946	100A	2017-12-04 @ 11:00 am	2017-12-07 @ 11:00 am	1.2 ± 0.3	2017-12-11
7985933	100B	2017-12-04 @ 11:00 am	2017-12-07 @ 11:00 am	1.3 ± 0.3	2017-12-11
7985937	100C	2017-12-04 @ 11:00 am	2017-12-07 @ 11:00 am	1.3 ± 0.3	2017-12-11
7985935	100E	2017-12-04 @ 11:00 am	2017-12-07 @ 11:00 am	1.6 ± 0.3	2017-12-12
7985938	100F	2017-12-04 @ 11:00 am	2017-12-07 @ 11:00 am	1.5 ± 0.3	2017-12-11
7985941	100G	2017-12-04 @ 11:00 am	2017-12-07 @ 11:00 am	1.9 ± 0.3	2017-12-12
7985947	100H	2017-12-04 @ 11:00 am	2017-12-07 @ 11:00 am	1.8 ± 0.3	2017-12-12
7985949	101	2017-12-04 @ 11:00 am	2017-12-07 @ 11:00 am	0.7 ± 0.3	2017-12-11
7985954	102	2017-12-04 @ 11:00 am	2017-12-07 @ 11:00 am	0.9 ± 0.3	2017-12-11
7985931	103	2017-12-04 @ 11:00 am	2017-12-07 @ 11:00 am	0.8 ± 0.3	2017-12-11
7985936	104	2017-12-04 @ 11:00 am	2017-12-07 @ 11:00 am	0.6 ± 0.3	2017-12-11
7985939	105	2017-12-04 @ 11:00 am	2017-12-07 @ 11:00 am	0.8 ± 0.3	2017-12-11
7985912	113	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	1.1 ± 0.3	2017-12-11
7985911	115	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	1.0 ± 0.3	2017-12-11
7985914	118	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	1.7 ± 0.3	2017-12-11
7985905	120	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	1.7 ± 0.3	2017-12-12
7985916	122	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	2.1 ± 0.4	2017-12-12
7985955	124	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	1.3 ± 0.3	2017-12-11
7985934	124	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	1.1 ± 0.3	2017-12-11
7985927	124A	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	1.2 ± 0.3	2017-12-11
7985913	125	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	1.4 ± 0.3	2017-12-11
7985918	126	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	1.3 ± 0.3	2017-12-12
7985910	129	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	2.4 ± 0.3	2017-12-11
7985917	131	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	1.2 ± 0.3	2017-12-11
7985904	132	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	1.4 ± 0.3	2017-12-11
7985919	132A	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	2.1 ± 0.3	2017-12-11
7985902	133	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	1.3 ± 0.3	2017-12-12
7985928	134	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	0.8 ± 0.3	2017-12-11
7985924	135	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	0.8 ± 0.3	2017-12-11
7985926	135	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	1.3 ± 0.3	2017-12-11
7985903	135	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	1.0 ± 0.3	2017-12-11
7985929	136	@	@		
7985922	139	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	0.8 ± 0.3	2017-12-12
7985930	140	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	< 0.3	2017-12-11
7985932	140	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	0.7 ± 0.3	2017-12-11
7985923	140	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	1.1 ± 0.3	2017-12-12

December 29, 2017

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
EMORY GROVE CENTER
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7985921	141	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	0.8 ± 0.3	2017-12-11
7985920	144	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	1.3 ± 0.3	2017-12-12
7985915	APR	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	1.1 ± 0.3	2017-12-11
7985901	APR	2017-12-04 @ 12:00 pm	2017-12-07 @ 11:00 am	1.5 ± 0.3	2017-12-12
7979378	OFFICE BLANK	2017-12-04 @ 1:00 pm	2017-12-07 @ 1:00 pm	< 0.3	2017-12-11

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase

Names of Schools:

1. Brooke Grove Elementary School
2. Brown Station Elementary School
3. Diamond Elementary School Addition
4. Dufief Elementary School
5. Emory Grove Center
6. Fields Road Elementary School
7. Facilities Maintenance Depot
8. Forest Oak Middle School
9. Francis Scott Key Middle School
10. Gaithersburg Elementary School
11. Gaithersburg Middle School
12. Germantown Elementary School
13. Greenwood Elementary School
14. Jones Lane Elementary School
14. Newport Mill Middle School
15. Oakview Elementary School
16. Quince Orchard High School
17. Robert Frost Middle School
18. Rosa Parks Middle School
19. South Lake Elementary School

	Date	Initials
Radon Test Kits Deployed	12/04/17	JM
Radon Test Kits Collected	12/07/17	JM
Radon Test Kits Shipped to Lab*	12/07/17	JM
Radon Test Kits Received by Lab*	12/11/17	JM

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

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

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

December 19, 2017

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

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

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

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 182393

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

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

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

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

7975075, 7975064, 7975063, _____

7975065, 7975069, 7975070 _____

F4 Right

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

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

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

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

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

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

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



MCPS RADON TESTING

Executive Summary: Emory Grove Optimal Learning Center

Date of Test Report:	10/19/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	7
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	0.8

Project Status:

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



October 19, 2016

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

Re: **Radon Testing Services**
KCI Job # 12146341.54

Location: Emory Grove Optimal Learning Center
18100 Washington Grove Lane
Gaithersburg, Maryland 20877

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 Emory Grove Optimal Learning Center, located at 18100 Washington Grove Lane in Gaithersburg, Maryland 20877 (subject site).

Scope of Services:

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Safety Board (NRSB) Radon Measurement Specialist (certification #14SS056) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from www.montgomerycountymd.gov/dep/air/radon or www.epa.gov/radon.

KCI visited the site on September 27, 2016 and deployed ten (10) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on September 30, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936

Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

These tests represent:

- Post-mitigation testing for radon mitigation systems installed recently

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

- Confirm the success of the mitigation system(s)

Future periodic testing should be conducted during the heating season in ideal conditions as described below. According to AARST, *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*, ideal testing conditions would be when the building is fully occupied and the heating system is active. For this test, the facility's HVAC system was operating in cooling mode; therefore, KCI concludes that this test was not conducted during ideal testing conditions.

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

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

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

Results:

The results of the radon test analysis indicated the following:

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

Notes:

D- Duplicate sample

The 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. Moulds
Radon Measurement Specialist
KCI Technologies, Inc.

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Radon Testing Results		
Emory Grove Center		
Test Period: 09/27/16-09/30/16		
Kit Number	Room / Area	Result
7802969	134	0.8
7802967	135	0.5
7802975	135	0.8
7802956	136	< 0.3
7802976	139	< 0.3
7802961	140	< 0.3
7802955	141	0.5
7802964	139A	< 0.3

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Emory Grove Center		
Test Period: 09/27/16-09/30/16		
Kit Number	QC Type	Result
7802970	D (134)	0.8
7802973	FB (134)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

October 7, 2016

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
EMORY GROVE CENTER
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7802973	134	2016-09-27 @ 4:00 pm	2016-09-30 @ 12:00 pm	< 0.3	2016-10-03
7802969	134	2016-09-27 @ 4:00 pm	2016-09-30 @ 12:00 pm	0.8 ± 0.2	2016-10-03
7802970	134	2016-09-27 @ 4:00 pm	2016-09-30 @ 12:00 pm	0.8 ± 0.3	2016-10-03
7802975	135	2016-09-27 @ 4:00 pm	2016-09-30 @ 12:00 pm	0.8 ± 0.2	2016-10-03
7802967	135	2016-09-27 @ 4:00 pm	2016-09-30 @ 12:00 pm	0.5 ± 0.3	2016-10-03
7802956	136	2016-09-27 @ 4:00 pm	2016-09-30 @ 12:00 pm	< 0.3	2016-10-03
7802976	139	2016-09-27 @ 4:00 pm	2016-09-30 @ 12:00 pm	< 0.3	2016-10-03
7802964	139A	2016-09-27 @ 4:00 pm	2016-09-30 @ 12:00 pm	< 0.3	2016-10-03
7802961	140	2016-09-27 @ 4:00 pm	2016-09-30 @ 12:00 pm	< 0.3	2016-10-03
7802955	141	2016-09-27 @ 4:00 pm	2016-09-30 @ 12:00 pm	0.5 ± 0.2	2016-10-03

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

October 7, 2016

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

MCPS Radon

Phase 18 Office Blanks

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

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

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

October 12, 2016

**** LABORATORY ANALYSIS REPORT ****

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

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

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

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 176788

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

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

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

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

7769899, 7769884, 7769885, _____

7769889, 7769890, 7769891 _____

F3 Left

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

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

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

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

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

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

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 18

Name of Schools:

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

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

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 18

Name of Schools:

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

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

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

RADON SCREENING SURVEY – FOLLOW-UP BLAIR G. EWING CENTER

14501 Avery Rd, Rockville, Maryland 20853

EXECUTIVE SUMMARY

Date of Test Report:	3/3/16
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	3
# Rooms \geq 4.0 pCi/L:	1
Low Value:	0.9
High Value:	12.1
Confirmed Rooms \geq 4.0 pCi/L US EPA Action Level	1

Summary of Sampling Events \geq 4.0 pCi/L

Room	Result (pCi/L) 2/23/16	Result (pCi/L) 3/3/16	Average Result (pCi/L)
Gym Office	9.8	12.1	11.0
Health Room	4.8	2.2	3.5
L8	1.2 (tampered)	0.9	1.1



MCPS RADON TESTING

Executive Summary: Blair G. Ewing Center

Date of Test Report:	3/3/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	3
# Rooms \geq 4.0 pCi/L:	1
Low Value:	0.9
High Value:	12.1

Rooms with results \geq 4.0 pCi/L:
Gym Office (12.1 pCi/L)

Project Status:

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



March 3, 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 # 12146341.28

Location: Blair G. Ewing Center
14501 Avery Road
Rockville, MD 20853

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 Blair G. Ewing Center, located at 14501 Avery Road in Rockville, Maryland 20853 (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 8, 2016 and deployed five (5) 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 11, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936

Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

The operating condition that represents the greatest amount of significantly occupied time for this building is; heating active, with outdoor temperature averages $\leq 65^{\circ}$ F.

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

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

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

Results:

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
≥ 4.0 pCi/L	Gym Office	12.1
< 4.0 pCi/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. Mouldale
Radon Measurement Specialist
KCI Technologies, Inc.

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank*

PM- Project Manager

QC- Quality Control

*Office blanks were submitted at a rate of 1% for all samples deployed in Phase 8 testing. Office blanks were not submitted under each school individually.

Radon Testing Results		
Blair G Ewing Center		
Test Period: 02/08/16-02/11/16		
Kit Number	Room / Area	Result
7730193	GYM OFFICE	12.1
7730190	HEALTH ROOM	2.2
7730189	L8	0.9

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Blair G Ewing Center		
Test Period: 02/08/16-02/11/16		
Kit Number	QC Type	Result
7730191	D (HEALTH ROOM)	1.9
7730192	FB (HEALTH ROOM)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

February 25, 2016
****LABORATORY ANALYSIS
REPORT ****

Radon test result report for:
**BLAIR G EWING CENTER
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7730193	GYM OFFICE	2016-02-08 @ 2:00 pm	2016-02-11 @ 11:00 am	12.1 ± 0.8	2016-02-15
7730190	HEALTH ROOM	2016-02-08 @ 2:00 pm	2016-02-11 @ 11:00 am	2.2 ± 0.4	2016-02-15
7730191	HEALTH ROOM	2016-02-08 @ 2:00 pm	2016-02-11 @ 11:00 am	1.9 ± 0.4	2016-02-15
7730192	HEALTH ROOM	2016-02-08 @ 2:00 pm	2016-02-11 @ 11:00 am	< 0.3	2016-02-15
7730189	L8	2016-02-08 @ 2:00 pm	2016-02-11 @ 11:00 am	0.9 ± 0.3	2016-02-15

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

February 25, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**MCPS RADON
PHASE 8
OFFICE BLANKS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7729754	0	2016-02-08 @ 4:00 pm	2016-02-11 @ 5:00 pm	< 0.3	2016-02-15
7729757	0	2016-02-08 @ 4:00 pm	2016-02-11 @ 5:00 pm	< 0.3	2016-02-15
7729758	0	2016-02-08 @ 4:00 pm	2016-02-11 @ 5:00 pm	< 0.3	2016-02-15

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

February
15,
2016

****LABORATORY ANALYSIS
REPORT****

Spike Sample Laboratory Results

Radon test result report for:
MCPS

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

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

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCF Technologies Inc. Job Number 173704

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

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

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

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

7718281, 7718282, 7718291, _____

7718288, 7718289, 7718273 _____

ε3 Left

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

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

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

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

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

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

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 8

Name of Schools:

- | | |
|--------------------------|--------------------------|
| 1. Blair G. Ewing Center | 12. Jackson Road ES |
| 2. Cedar Grove ES | 13. Jones Lane ES |
| 3. Clarksburg ES | 14. Lake Seneca ES |
| 4. Cloverly ES | 15. Laytonsville ES |
| 5. Cold Spring ES | 16. Montgomery Knolls ES |
| 6. Damascus ES | 17. North Chevy Chase ES |
| 7. Dufief ES | 18. Oakview ES |
| 8. East Silver Spring | 19. Randolph Maint |
| 9. Georgian Forest ES | 20. Robert Frost MS |
| 10. Germantown ES | 21. Shady Grove Maint |
| 11. Glenallen ES | 22. Viers Mill ES |

	Date	Initials
Radon Test Kits Deployed	2/8/16	JM
Radon Test Kits Collected	2/11/16	JM
Radon Test Kits Shipped to Lab*	12/11/16	JM
Radon Test Kits Received by Lab*	12/15/16	JM

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



MCPS RADON TESTING

Executive Summary: Blair G. Ewing Center

Date of Test Report:	2/23/2016 (Rev 2)
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	94
# Rooms \geq 4.0 pCi/L:	2
Low Value:	< 0.3
High Value:	9.8

Rooms with results \geq 4.0 pCi/L:
Gym office (9.8 pCi/L), Health Room (4.8 pCi/L)

Project Status:

Initial testing completed; re-test needed for results \geq 4.0 pCi/L.
Initial testing completed; missing or compromised samples need re-test.



February 23, 2016 (Rev 2)

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: Blair G. Ewing Center
14501 Avery Road
Rockville, MD 20853

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 Blair G. Ewing Center, located at 14501 Avery Road in Rockville, Maryland 20853 (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-twelve (112) 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 $\leq 65^{\circ}$ F.

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

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

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

Results:

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
≥ 4.0 pCi/L	Gym Office	9.8
	Health Room	4.8
< 4.0 pCi/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. Mouldale
Radon Measurement Specialist
KCI Technologies, Inc.

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

B- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

Radon Testing Results		
Blair G. Ewing Center		
Test Period: 12/21/15-12/24/15		
Kit Number	Room / Area	Result
7707095	A1	1.1
7707038	A10	2.0
7707041	A11	2.0
7707078	A14	1.3
7707075	A14A	0.9
7707089	A15	1.4
7707082	A16	1.0
7707046	A17	1.4
7707045	A17A	2.5
7707049	A17B	1.5
7707036	A19	0.9
7707085	A3	2.2
7707081	A4	1.0
7707064	A5	1.9
7707065	A6	1.4
7707043	A7	1.1
7707051	AB1	2.1
7707057	AB2	1.7
7707050	AB3	2.7
7707025	AB4	0.9
7707077	AB5 OFFICE	0.8
7707040	AB6	1.3
7707090	COMM. CONF RM	< 0.3
7707048	CONFERENCE RM A	0.7
7707087	CONFERENCE RM C	0.8
7707021	COUNSELOR OFFICE	2.5
7707091	FRONT DESK	1.1
7707020	GYM	< 0.3
7707059	GYM	0.8
7707062	GYM OFFICE	9.8
7707060	HEALTH RM	4.8
7707073	HEALTH RM OFFICE	1.4
7707010	L10	0.9
7707108	L11	0.8
7707009	L12	0.9
7707004	L12 OFFICE	0.9
7707098	L13	2.6
7707003	L14	1.4
7707096	L15	0.9
7707001	L16	1.6
7707083	L16 CONFER. RM	1.8
7707107	L17	1.0
7707086	L17 OFFICE	1.2
7707101	L3	0.9
7707076	L4	0.8
7707092	L5	1.0

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Blair G. Ewing Center		
Test Period: 12/21/15-12/24/15		
Kit Number	Room / Area	Result
7707102	L7	0.6
7707111	L7 OFFICE	0.7
7707006	* L8 (tampered)	1.2
7707066	L8 OFFICE	1.7
7707099	L9	1.2
7707053	M10	0.8
7707072	M11	1.7
7707011	M11 OFFICE	0.8
7707007	M12	3.3
7707014	M12 OFFICE	1.5
7707069	M13	1.4
7707054	M14	1.1
7707015	M15	0.8
7707018	M16	1.5
7707042	M17	0.9
7707047	M17 OFFICE	0.9
7707008	M2	0.9
7707074	M3	1.4
7707037	M4	1.1
7707071	M5	1.0
7707013	M5 OFFICE	0.6
7707058	M6	0.8
7707084	M7	1.8
7707019	M8	0.8
7707063	M8 TEACHER RM	1.0
7707005	M9	1.5
7707080	MPR	1.3
7707070	PRINCIPAL OFFICE	0.6
7707105	RC1	0.7
7707056	RC10	1.5
7707112	RC2	0.5
7707109	RC3	0.6
7707110	RC-6	< 0.3
7707106	RC7	< 0.3
7707088	RC8	< 0.3
7707022	SERVER ROOM	3.4
7707031	SM DINNING RM	< 0.3
7707035	STAFF LOUNGE	0.7
7707027	U1	0.9
7707052	U10	2.1
7707030	U10 OFFICE	0.7
7707034	U12	1.3
7707093	U3	2.1
7707033	U3 OFFICE	2.0
7707079	U4	1.8
7707028	U5	2.6
7707067	U6	1.7
7707024	U7A	1.4
7707029	U7B	0.7

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Blair G. Ewing Center		
Test Period: 12/21/15-12/24/15		
Kit Number	QC Type	Result
7707039	D (A19)	0.8
7707055	D (A7)	0.7
7707023	D (AB3)	2.9
7707002	D (L12 OFFICE)	1.2
7707103	D (L17)	1.0
7707097	D (L9)	1.2
7707012	D (M14)	1.3
7707016	D (M4)	1.1
7707017	D (M8)	0.9
7707061	D (U10 OFFICE)	0.9
7707026	D (U3)	2.4
7707044	FB (A7)	< 0.3
7707104	FB (L17)	< 0.3
7707068	FB (M6)	< 0.3
7707032	FB (U3)	< 0.3
7710502	OB (0)	< 0.3
7710508	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:
**BLAIR G. EWING CENTER
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7707022	Server Room	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	3.4 ± 0.4	2015-12-28
7710502	0	2015-12-21 @ 6:00 pm	2015-12-24 @ 2:00 pm	< 0.3	2015-12-29
7710508	0	2015-12-21 @ 6:00 pm	2015-12-24 @ 2:00 pm	< 0.3	2015-12-29
7707095	A1	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.1 ± 0.4	2015-12-29
7707038	A10	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	2.0 ± 0.3	2015-12-28
7707041	A11	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	2.0 ± 0.4	2015-12-29
7707078	A14	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.3 ± 0.3	2015-12-28
7707075	A14A	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	0.9 ± 0.3	2015-12-28
7707089	A15	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	1.4 ± 0.3	2015-12-28
7707082	A16	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.0 ± 0.3	2015-12-28
7707046	A17	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	1.4 ± 0.3	2015-12-28
7707045	A17A	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	2.5 ± 0.4	2015-12-28
7707049	A17B	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	1.5 ± 0.3	2015-12-28
7707036	A19	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	0.9 ± 0.3	2015-12-28
7707039	A19	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	0.8 ± 0.3	2015-12-28
7707085	A3	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	2.2 ± 0.4	2015-12-28
7707081	A4	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.0 ± 0.3	2015-12-28
7707064	A5	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.9 ± 0.3	2015-12-28
7707065	A6	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.4 ± 0.3	2015-12-28
7707043	A7	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.1 ± 0.3	2015-12-28
7707044	A7	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	< 0.3	2015-12-28
7707055	A7	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	0.7 ± 0.3	2015-12-28
7707051	AB1	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	2.1 ± 0.4	2015-12-28
7707057	AB2	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	1.7 ± 0.3	2015-12-28
7707023	AB3	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	2.9 ± 0.4	2015-12-28
7707050	AB3	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	2.7 ± 0.4	2015-12-28
7707025	AB4	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	0.9 ± 0.3	2015-12-28
7707077	AB5 OFFICE	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	0.8 ± 0.3	2015-12-28
7707040	AB6	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	1.3 ± 0.3	2015-12-28
7707090	COMM. CONF RM	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	< 0.3	2015-12-28
7707048	CONFERENCE RM A	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	0.7 ± 0.3	2015-12-28
7707087	CONFERENCE RM C	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	0.8 ± 0.3	2015-12-28
7707021	COUNSELOR OFFICE	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	2.5 ± 0.4	2015-12-28
7707091	FRONT DESK	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.1 ± 0.3	2015-12-28
7707059	GYM	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	0.8 ± 0.3	2015-12-29
7707020	GYM	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	< 0.3	2015-12-29
7707062	GYM OFFICE	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	9.8 ± 0.7	2015-12-28

January 12, 2016 **LABORATORY ANALYSIS REPORT ****

Radon test result report for:
BLAIR G. EWING CENTER
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7707060	HEALTH RM	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	4.8 ± 0.5	2015-12-28
7707073	HEALTH RM OFFICE	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	1.4 ± 0.3	2015-12-28
7707010	L10	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	0.9 ± 0.3	2015-12-29
7707108	L11	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	0.8 ± 0.3	2015-12-28
7707009	L12	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	0.9 ± 0.3	2015-12-29
7707002	L12 OFFICE	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	1.2 ± 0.3	2015-12-28
7707004	L12 OFFICE	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	0.9 ± 0.3	2015-12-29
7707098	L13	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	2.6 ± 0.4	2015-12-28
7707003	L14	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	1.4 ± 0.3	2015-12-29
7707096	L15	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	0.9 ± 0.3	2015-12-28
7707001	L16	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	1.6 ± 0.3	2015-12-28
7707083	L16 CONFER. RM	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	1.8 ± 0.3	2015-12-28
7707103	L17	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	1.0 ± 0.3	2015-12-29
7707104	L17	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-29
7707107	L17	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	1.0 ± 0.3	2015-12-29
7707086	L17 OFFICE	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	1.2 ± 0.3	2015-12-28
7707101	L3	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	0.9 ± 0.3	2015-12-28
7707076	L4	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	0.8 ± 0.3	2015-12-28
7707092	L5	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	1.0 ± 0.3	2015-12-29
7707102	L7	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	0.6 ± 0.3	2015-12-28
7707111	L7 OFFICE	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	0.7 ± 0.3	2015-12-29
7707006	L8	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	1.2 ± 0.3	2015-12-28
7707066	L8 OFFICE	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	1.7 ± 0.4	2015-12-29
7707097	L9	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	1.2 ± 0.3	2015-12-28
7707099	L9	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	1.2 ± 0.3	2015-12-29
7707053	M10	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	0.8 ± 0.3	2015-12-28
7707072	M11	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	1.7 ± 0.3	2015-12-28
7707011	M11 OFFICE	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	0.8 ± 0.3	2015-12-28
7707007	M12	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	3.3 ± 0.4	2015-12-28
7707014	M12 OFFICE	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	1.5 ± 0.3	2015-12-28
7707069	M13	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	1.4 ± 0.3	2015-12-28
7707012	M14	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	1.3 ± 0.3	2015-12-28
7707054	M14	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	1.1 ± 0.3	2015-12-29
7707015	M15	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	0.8 ± 0.3	2015-12-29
7707018	M16	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	1.5 ± 0.4	2015-12-29
7707042	M17	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	0.9 ± 0.4	2015-12-29
7707047	M17 OFFICE	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	0.9 ± 0.3	2015-12-28

January 12, 2016 **LABORATORY ANALYSIS REPORT ****

Radon test result report for:
BLAIR G. EWING CENTER
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7707008	M2	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	0.9 ± 0.3	2015-12-28
7707074	M3	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	1.4 ± 0.4	2015-12-29
7707016	M4	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	1.1 ± 0.3	2015-12-28
7707037	M4	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	1.1 ± 0.3	2015-12-28
7707071	M5	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	1.0 ± 0.3	2015-12-29
7707013	M5 OFFICE	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	0.6 ± 0.3	2015-12-28
7707058	M6	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	0.8 ± 0.3	2015-12-28
7707068	M6	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	< 0.3	2015-12-29
7707084	M7	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	1.8 ± 0.4	2015-12-29
7707017	M8	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	0.9 ± 0.3	2015-12-29
7707019	M8	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	0.8 ± 0.3	2015-12-29
7707063	M8 TEACHER RM	2015-12-21 @ 3:00 pm	2015-12-24 @ 9:00 am	1.0 ± 0.3	2015-12-29
7707005	M9	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	1.5 ± 0.3	2015-12-29
7707080	MPR	2015-12-21 @ 12:00 pm	2015-12-24 @ 8:00 am	1.3 ± 0.3	2015-12-28
7707070	PRINCIPAL OFFICE	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	0.6 ± 0.3	2015-12-28
7707110	RC-6	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-29
7707105	RC1	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	0.7 ± 0.3	2015-12-29
7707056	RC10	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	1.5 ± 0.4	2015-12-28
7707112	RC2	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	0.5 ± 0.3	2015-12-28
7707109	RC3	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	0.6 ± 0.3	2015-12-29
7707106	RC7	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-29
7707088	RC8	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-28
7707031	SM DINNING RM	2015-12-21 @ 12:00 pm	2015-12-24 @ 8:00 am	< 0.3	2015-12-28
7707035	STAFF LOUNGE	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	0.7 ± 0.3	2015-12-29
7707027	U1	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	0.9 ± 0.3	2015-12-28
7707052	U10	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	2.1 ± 0.4	2015-12-28
7707061	U10 OFFICE	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	0.9 ± 0.3	2015-12-28
7707030	U10 OFFICE	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	0.7 ± 0.3	2015-12-28
7707034	U12	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	1.3 ± 0.4	2015-12-29
7707026	U3	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	2.4 ± 0.4	2015-12-28
7707032	U3	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	< 0.3	2015-12-28
7707093	U3	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	2.1 ± 0.4	2015-12-28
7707033	U3 OFFICE	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	2.0 ± 0.4	2015-12-28
7707079	U4	2015-12-21 @ 12:00 pm	2015-12-24 @ 8:00 am	1.8 ± 0.4	2015-12-28
7707028	U5	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	2.6 ± 0.4	2015-12-28
7707067	U6	2015-12-21 @ 12:00 pm	2015-12-24 @ 8:00 am	1.7 ± 0.3	2015-12-28
7707024	U7A	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	1.4 ± 0.3	2015-12-28

January 12, 2016
**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**BLAIR G. EWING CENTER
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7707029	U7B	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	0.7 ± 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

December
23,
2015

**LABORATORY ANALYSIS
REPORT ****

Spike Sample Laboratory Results

Radon test result report for:
MCPS

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

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

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 173224

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

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

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

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

7706211, 7706366, _____

7706380, 7706381 _____

F3 Left

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

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

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

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

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

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

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



Chain of Custody

Project Name: MCPS Radon Phase II

School Names:

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

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

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