



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:	Clopper Mill Elementary School
Address:	18501 Cinnamon Drive
	Germantown, MD 20874

Reason for Testing:	<input type="checkbox"/> Scheduled Re-Testing (2 or 5-year schedule) <input checked="" 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	
Shakia Dawkins			KCI Technologies, Inc.	
<i>If noncertified individuals, the qualified measurement professional providing oversight -</i>				
Tyler McCleaf, CSP – Cert. #111004-RMP			KCI Technologies, Inc.	

Testing

<input checked="" type="checkbox"/> Short-Term	Length of Test (days):	3	Date of Deployment and Retrieval (mm/dd/yy):	01/23/24
<input type="checkbox"/> Long-Term				01/26/24
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	61	0	61
Duplicates ²	6	0	6
Field Blanks ³	3	0	3
Grand Total			70

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	2	Office Blank(s) ^{3,4}	2
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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:	61	0	61
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**Clopper Mill Elementary School****Test Period: 01/23/2024 - 01/26/2024**

Kit Number	Room / Area	Result
11463968	2	1.3
11463956	3	0.8
11463958	4	0.9
11463952	6	1.5
11463933	7	1.1
11463944	8	0.7
11463966	9	0.8
11463943	10	0.7
11463960	10	< 0.3
11463949	11	1.7
11463967	12	1.8
11463963	13	1.2
11463964	14	1.6
11463915	15	0.8
11463910	16	1.3
11463942	17	0.9
11463913	18	0.6
11463901	19	< 0.3
11463903	19	< 0.3
11463902	20	0.7
11463920	21	0.5
11463904	22	0.7
11463911	23	0.6
11463912	24	0.6
11463923	25	< 0.3
11463936	25	0.6
11463935	26	< 0.3
11463917	27	< 0.3
11463926	28	< 0.3
11463906	29	1.0
11463946	30	0.5
11463929	31	0.6
11463938	32	1.9
11463937	101	1.0
11463957	133	0.9
11463918	27 OFFICE	< 0.3
11463965	5A	< 0.3
11463959	5B	0.5

Table 1- Radon Testing Results		
Clopper Mill Elementary School		
Test Period: 01/23/2024 - 01/26/2024		
11463921	APR	1.6
11463922	APR	2.5
11463927	ASSISTANT PRINCIPAL	0.8
11463934	BS OFFICE	< 0.3
11463916	CONFERENCE	0.7
11463909	GYM	1.0
11463919	GYM	< 0.3
11463905	GYM OFFICE	< 0.3
11463941	HEALTH ROOM	0.8
11463939	IMC	0.5
11463940	IMC	< 0.3
11463950	K1	1.2
11463955	K2	0.8
11463948	K3	0.7
11463951	K3	0.5
11463945	K4	0.5
11463914	KITCHEN OFFICE	1.2
11463924	MAIN OFFICE	0.9
11463925	PRINCIPAL	1.4
11463908	STAFF LOUNGE	1.0
11463930	STAGE	1.4
11463928	WORKROOM	0.8
11463932	WORKROOM	< 0.3
11478488	30	0.7
11478190	9	0.6
11464076	PE Office	<0.3

Table 3 - QC Radon Testing Results			
Clopper Mill Elementary School			
Test Period: 01/23/2024 - 01/26/2024			
Kit Number	QC Type	Room / Area	Result
11463921	D	APR	1.6
11463960	FB	10	< 0.3
11463903	FB	19	< 0.3
11463936	FB	25	0.6
11463939	FB	IMC	0.5
11463951	D	K3	0.5
11463691	OB	OFFICE BLANK	< 0.3
11463647	TB	TRAVEL BLANK	< 0.3
11478488	D	30	0.7
11478190	D	9	0.6
11464076	D	PE Office	<0.3

Attachment 2:
Laboratory Reports

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11463960	10	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	< 0.3	2024-01-30
11463943	10	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.7 ± 0.3	2024-01-30
11463937	101	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	1.0 ± 0.3	2024-01-30
11463949	11	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	1.7 ± 0.3	2024-01-30
11463967	12	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	1.8 ± 0.3	2024-01-30
11463963	13	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	1.2 ± 0.3	2024-01-30
11463957	133	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.9 ± 0.3	2024-01-30
11463964	14	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	1.6 ± 0.3	2024-01-30
11463915	15	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.8 ± 0.3	2024-01-30
11463910	16	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	1.3 ± 0.3	2024-01-30
11463942	17	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.9 ± 0.3	2024-01-30
11463913	18	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.6 ± 0.3	2024-01-30
11463903	19	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	< 0.3	2024-01-30
11463901	19	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	< 0.3	2024-01-30
11463968	2	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	1.3 ± 0.3	2024-01-30
11463902	20	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.7 ± 0.3	2024-01-30
11463920	21	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.5 ± 0.3	2024-01-30
11463904	22	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.7 ± 0.3	2024-01-30
11463911	23	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.6 ± 0.3	2024-01-30
11463912	24	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.6 ± 0.3	2024-01-30
11463936	25	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.6 ± 0.3	2024-01-30
11463923	25	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	< 0.3	2024-01-30
11463935	26	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	< 0.3	2024-01-30
11463917	27	2024-01-23 @ 10:00 am	2024-01-26 @ 10:00 am	< 0.3	2024-01-30
11463918	27 OFFICE	2024-01-23 @ 10:00 am	2024-01-26 @ 10:00 am	< 0.3	2024-01-30
11463926	28	2024-01-23 @ 10:00 am	2024-01-26 @ 10:00 am	< 0.3	2024-01-30
11463906	29	2024-01-23 @ 10:00 am	2024-01-26 @ 10:00 am	1.0 ± 0.3	2024-01-30
11463956	3	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.8 ± 0.3	2024-01-30
11463946	30	2024-01-23 @ 12:00 pm	2024-01-26 @ 12:00 pm	0.5 ± 0.3	2024-01-30
11463929	31	2024-01-23 @ 10:00 am	2024-01-26 @ 10:00 am	0.6 ± 0.3	2024-01-30
11463938	32	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	1.9 ± 0.3	2024-01-30
11463958	4	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.9 ± 0.3	2024-01-30
11463965	5A	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	< 0.3	2024-01-30
11463959	5B	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.5 ± 0.3	2024-01-30
11463952	6	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	1.5 ± 0.3	2024-01-30
11463933	7	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	1.1 ± 0.3	2024-01-30
11463944	8	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.7 ± 0.3	2024-01-30

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11463966	9	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.8 ± 0.3	2024-01-30
11463921	APR	2024-01-23 @ 10:00 am	2024-01-26 @ 10:00 am	1.6 ± 0.3	2024-01-30
11463922	APR	2024-01-23 @ 10:00 am	2024-01-26 @ 10:00 am	2.5 ± 0.4	2024-01-30
11463927	ASSISTANT PRINCIPAL	2024-01-23 @ 10:00 am	2024-01-26 @ 10:00 am	0.8 ± 0.3	2024-01-30
11463934	BS OFFICE	2024-01-23 @ 10:00 am	2024-01-26 @ 10:00 am	< 0.3	2024-01-30
11463916	CONFERENCE	2024-01-23 @ 10:00 am	2024-01-26 @ 10:00 am	0.7 ± 0.3	2024-01-30
11463909	GYM	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	1.0 ± 0.3	2024-01-30
11463919	GYM	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	< 0.3	2024-01-30
11463905	GYM OFFICE	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	< 0.3	2024-01-30
11463941	HEALTH ROOM	2024-01-23 @ 10:00 am	2024-01-26 @ 10:00 am	0.8 ± 0.3	2024-01-30
11463940	IMC	2024-01-23 @ 12:00 pm	2024-01-26 @ 12:00 pm	< 0.3	2024-01-30
11463939	IMC	2024-01-23 @ 12:00 pm	2024-01-26 @ 12:00 pm	0.5 ± 0.3	2024-01-30
11463950	K1	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	1.2 ± 0.3	2024-01-30
11463955	K2	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.8 ± 0.3	2024-01-30
11463951	K3	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.5 ± 0.3	2024-01-30
11463948	K3	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.7 ± 0.3	2024-01-30
11463945	K4	2024-01-23 @ 11:00 am	2024-01-26 @ 11:00 am	0.5 ± 0.3	2024-01-30
11463914	KITCHEN OFFICE	2024-01-23 @ 10:00 am	2024-01-26 @ 10:00 am	1.2 ± 0.3	2024-01-30
11463924	MAIN OFFICE	2024-01-23 @ 10:00 am	2024-01-26 @ 10:00 am	0.9 ± 0.3	2024-01-30
11463925	PRINCIPAL	2024-01-23 @ 10:00 am	2024-01-26 @ 10:00 am	1.4 ± 0.3	2024-01-30
11463908	STAFF LOUNGE	2024-01-23 @ 10:00 am	2024-01-26 @ 10:00 am	1.0 ± 0.3	2024-01-30
11463930	STAGE	2024-01-23 @ 10:00 am	2024-01-26 @ 10:00 am	1.4 ± 0.4	2024-01-30
11463932	WORKROOM	2024-01-23 @ 12:00 pm	2024-01-26 @ 12:00 pm	< 0.3	2024-01-30
11463928	WORKROOM	2024-01-23 @ 10:00 am	2024-01-26 @ 10:00 am	0.8 ± 0.3	2024-01-30

March 4, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11478488	30	2024-02-26 @ 10:00 am	2024-02-29 @ 9:00 am	0.7 ± 0.3	2024-03-04
11478190	9	2024-02-26 @ 10:00 am	2024-02-29 @ 9:00 am	0.6 ± 0.3	2024-03-04
11464076	PE OFFICE	2024-02-26 @ 10:00 am	2024-02-29 @ 9:00 am	< 0.3	2024-03-04

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

January 30, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**KCI
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11463691	OB	2024-01-23 @ 8:00 am	2024-01-26 @ 2:00 pm	< 0.3	2024-01-30
11463647	TB	2024-01-23 @ 8:00 am	2024-01-26 @ 2:00 pm	< 0.3	2024-01-30

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

March 5, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**KCI
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11284001	OB	2024-02-26 @ 8:00 am	2024-02-29 @ 1:00 pm	< 0.3	2024-03-04
11482791	TB	2024-02-26 @ 8:00 am	2024-02-29 @ 1:00 pm	< 0.3	2024-03-04

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 213327

NOMINAL Conditions: Radon Conc 49.5 pCi/L Rel. Hum 24.7 % Temp. 69.8 F

Date Start: 1/19/24 Date Stop: 1/22/24 Date Start: _____ Date Stop: _____

Time Start: 0831 Time Stop: 0831 Time Start: _____ Time Stop: _____

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

11284003, 11284005, 11284006

11284007, 11284008, 11284013

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**

January 29, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**BOWSER MORNER
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11284003	SK	2024-01-19 @ 9:00 am	2024-01-22 @ 9:00 am	47.0 ± 3.8	2024-01-29
11284005	SK	2024-01-19 @ 9:00 am	2024-01-22 @ 9:00 am	43.4 ± 3.5	2024-01-29
11284006	SK	2024-01-19 @ 9:00 am	2024-01-22 @ 9:00 am	42.1 ± 3.4	2024-01-29
11284007	SK	2024-01-19 @ 9:00 am	2024-01-22 @ 9:00 am	46.4 ± 3.7	2024-01-29
11284008	SK	2024-01-19 @ 9:00 am	2024-01-22 @ 9:00 am	46.2 ± 3.7	2024-01-29
11284013	SK	2024-01-19 @ 9:00 am	2024-01-22 @ 9:00 am	45.6 ± 3.6	2024-01-29

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 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 µR/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 January 23rd to January 26th

Name of Schools:

1. Thomas S. Wootton HS
2. Sligo MS
3. White Oak MS
4. Rosa M. Parks MD
5. Clopper Mill ES
6. Thomas W. Pyle MS
7. Burnt Mills ES

	Date	Initials
Radon Test Kits Deployed	01/23/2024	BMM
Radon Test Kits Collected	01/26/2024	BMM
Radon Test Kits Shipped to Lab*	01/26/2024	BMM
Radon Test Kits Received by Lab*	01/30/2024	BMM

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Testing February 26th & February 29th 2024

Name of Schools:

- 1. Blair G. Ewing Center
- 2. Radnor Center
- 3. Rosa M. Parks MS
- 4. Cabin Branch ES
- 5. Westbrook ES
- 6. Clopper Mill ES

	Date	Initials
Radon Test Kits Deployed	02/26/2024	GM
Radon Test Kits Collected	02/29/2024	GM
Radon Test Kits Shipped to Lab*	02/29/2024	GM
Radon Test Kits Received by Lab*	01/30/2024	GM

*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	Clopper Mill Elementary School
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	55
# Rooms \geq 4.0 pCi/L	4
Lowest Value	<0.3 pCi/L
Highest Value	4.7 pCi/L

Project Status:

1. Initial testing completed;
2. Mitigate Rooms 25, 27, and Media.



January 25, 2023

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

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

Location: Clopper Mill Elementary School
18501 Cinnamon Drive
Germantown, MD 20874

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 Clopper Mill Elementary School, located at 18501 Cinnamon Dr. Germantown, MD 20874 (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 19, 2022 and deployed sixty-four (64) 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 22, 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 initial testing.

These tests were conducted to:

- Evaluate radon concentration levels at the facility.

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate temperatures ranged from 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	25	4.3
	27	4.7
	27	3.9
	MEDIA	4.4
<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		
Clopper Mill ES		
Test Period: 12/19/2022 - 12/22/2022		
Kit Number	Room / Area	Result
11288538	1	1.2
11288534	3	0.8
11288503	4	1.7
11288525	6	3.1
11288510	7	1.0
11288509	8	1.3
11288515	8	1.0
11288508	9	2.2
11288523	9	< 0.3
11288516	10	0.6
11288505	11	2.0
11288506	12	3.1
11288520	13	1.8
11288521	13	1.2
11287875	14	3.1
11288502	15	< 0.3
11288522	15	1.0
11287826	16	1.7
11287833	17	1.4
11287834	18	0.9
11287820	19	< 0.3
11287852	20	< 0.3
11288529	20	< 0.3
11287899	21	0.6
11287802	22	< 0.3
11287835	23	< 0.3
11288501	24	1.3
11287898	25	4.3
11288513	26	2.7
11287900	27	4.7
11288514	27	3.9
11287877	28	1.1
11287885	28	< 0.3
11288526	29	3.0
11288528	31	1.1
11288519	32	2.2
11287897	33	< 0.3
11287825	15B	< 0.3
11288524	5A	1.7
11288542	5B	0.7
11288540	APR	2.8
11288548	APR	3.1

Table 1- Radon Testing Results		
Clopper Mill ES		
Test Period: 12/19/2022 - 12/22/2022		
Kit Number	Room / Area	Result
11288530	ART	3.1
11288527	ASP	2.0
11288539	BUILDING SERVICES	< 0.3
11287895	CONFERENCE	2.2
11287829	GYM	3.4
11288507	GYM	3.1
11287687	GYM OFFICE	2.3
11287887	HEALTH	1.9
11288536	K1	< 0.3
11288504	K2	1.4
11288517	K3	< 0.3
11288533	K3	0.7
11288549	K4	< 0.3
11288547	MAIN OFFICE	1.9
11287872	MEDIA	4.4
11287871	MEDIA OFFICE	3.3
11287896	PRINCIPAL	2.8
11288541	SPEECH	1.6
11288543	STAFF KTICHEN	N/A
11287824	STAFF LOUNGE	1.7
11288544	STAFF LOUNGE	1.6
11287888	WORKROOM	2.0

Table 2- Radon Testing Results			
Clopper Mill ES			
Test Period: 12/19/22 - 12/22/22			
Kit Number	QC Type	Room / Area	Result
11288515	D	8	1.0
11288523	FB	9	< 0.3
11288521	D	13	1.2
11288502	FB	15	< 0.3
11288529	D	20	< 0.3
11287900	D	27	4.7
11287885	FB	28	< 0.3
11288533	D	K3	0.7
11287824	D	Staff lounge	1.7
11288518	OB	OFFICE BLANK	< 0.3
11287685	TB	TRAVEL BLANK	< 0.3

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:
CLOPPER MILL ES
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11288538	1	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	1.2 ± 0.6	2022-12-28
11288516	10	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	0.6 ± 0.5	2022-12-28
11288505	11	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	2.0 ± 0.6	2022-12-28
11288506	12	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	3.1 ± 0.7	2022-12-28
11288521	13	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	1.2 ± 0.6	2022-12-28
11288520	13	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	1.8 ± 0.6	2022-12-28
11287875	14	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	3.1 ± 0.7	2022-12-28
11288522	15	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	1.0 ± 0.6	2022-12-28
11288502	15	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11287825	15B	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11287826	16	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	1.7 ± 0.6	2022-12-28
11287833	17	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	1.4 ± 0.6	2022-12-28
11287834	18	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	0.9 ± 0.6	2022-12-28
11287820	19	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11288529	20	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11287852	20	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11287899	21	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	0.6 ± 0.5	2022-12-28
11287802	22	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11287835	23	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11288501	24	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	1.3 ± 0.6	2022-12-28
11287898	25	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	4.3 ± 0.8	2022-12-28
11288513	26	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	2.7 ± 0.7	2022-12-28
11287900	27	2022-12-19 @ 2:00 pm	2022-12-22 @ 12:00 pm	4.7 ± 0.8	2022-12-28
11288514	27	2022-12-19 @ 2:00 pm	2022-12-22 @ 12:00 pm	3.9 ± 0.8	2022-12-28
11287885	28	2022-12-19 @ 2:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11287877	28	2022-12-19 @ 2:00 pm	2022-12-22 @ 12:00 pm	1.1 ± 0.6	2022-12-28
11288526	29	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	3.0 ± 0.6	2022-12-28
11288534	3	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	0.8 ± 0.5	2022-12-28
11288528	31	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	1.1 ± 0.6	2022-12-28
11288519	32	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	2.2 ± 0.6	2022-12-28
11287897	33	2022-12-19 @ 2:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11288503	4	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	1.7 ± 0.6	2022-12-28
11288524	5A	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	1.7 ± 0.6	2022-12-28
11288542	5B	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	0.7 ± 0.5	2022-12-28
11288525	6	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	3.1 ± 0.7	2022-12-28
11288510	7	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	1.0 ± 0.6	2022-12-28
11288509	8	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	1.3 ± 0.6	2022-12-28

Radon test result report for:
CLOPPER MILL ES
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11288515	8	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	1.0 ± 0.5	2022-12-28
11288508	9	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	2.2 ± 0.6	2022-12-28
11288523	9	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11288548	APR	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	3.1 ± 0.7	2022-12-28
11288540	APR	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	2.8 ± 0.6	2022-12-28
11288530	ART	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	3.1 ± 0.7	2022-12-28
11288527	ASP	2022-12-19 @ 12:00 pm	2022-12-22 @ 12:00 pm	2.0 ± 0.6	2022-12-28
11288539	BUILDING SERVICES	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11287895	CONFERENCE	2022-12-19 @ 12:00 pm	2022-12-22 @ 12:00 pm	2.2 ± 0.6	2022-12-28
11287829	GYM	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	3.4 ± 0.7	2022-12-28
11288507	GYM	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	3.1 ± 0.7	2022-12-28
11287687	GYM OFFICE	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	2.3 ± 0.7	2022-12-28
11287887	HEALTH	2022-12-19 @ 12:00 pm	2022-12-22 @ 12:00 pm	1.9 ± 0.6	2022-12-28
11288536	K1	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11288504	K2	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	1.4 ± 0.6	2022-12-28
11288517	K3	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11288533	K3	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	0.7 ± 0.5	2022-12-28
11288549	K4	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11288547	MAIN OFFICE	2022-12-19 @ 12:00 pm	2022-12-22 @ 12:00 pm	1.9 ± 0.6	2022-12-28
11287872	MEDIA	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	4.4 ± 0.7	2022-12-28
11287871	MEDIA OFFICE	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	3.3 ± 0.7	2022-12-28
11287896	PRINCIPAL	2022-12-19 @ 12:00 pm	2022-12-22 @ 12:00 pm	2.8 ± 0.7	2022-12-28
11288541	SPEECH	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	1.6 ± 0.6	2022-12-28
11287824	STAFF LOUNGE	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	1.7 ± 0.6	2022-12-28
11288544	STAFF LOUNGE	2022-12-19 @ 1:00 pm	2022-12-22 @ 12:00 pm	1.6 ± 0.6	2022-12-28
11287888	WORKROOM	2022-12-19 @ 12:00 pm	2022-12-22 @ 12:00 pm	2.0 ± 0.6	2022-12-28

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. Clopper Mill ES
2. Cold Spring ES
3. Fox Chapel ES
4. Gaithersburg HS
5. Longview School
6. North Lake Center
7. Ronald McNair ES
8. Rosemont ES
9. S. Christa McAuliffe ES
10. Spark M. Matsunaga ES
11. William B. Gibbs, JR. ES

	Date	Initials
Radon Test Kits Deployed	12/19/2022	BMM
Radon Test Kits Collected	12/22/2022	BMM
Radon Test Kits Shipped to Lab*	12/22/2022	BMM
Radon Test Kits Received by Lab*	12/28/2022	BMM

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

RADON SCREENING SURVEY – FOLLOW-UP CLOPPER MILL ELEMENTARY SCHOOL

18501 Cinnamon Drive, Germantown, Maryland 20874

EXECUTIVE SUMMARY

Date of Test Report:	3/14/16 Follow-Up
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	5
# Rooms \geq 4.0 pCi/L:	0
Low Value:	<0.3
High Value:	3.0
Confirmed Rooms \geq 4.0 pCi/L US EPA Action Level	0

Summary of Sampling Events \geq 4.0 pCi/L

Room	Result (pCi/L) 2/4/16 (Rev 1 Initial)	Result (pCi/L) 3/14/16 Follow-Up	Average Result (pCi/L)
32	3.2 Tampered	2.1	2.7
Main Off	--- Missing	1.5	1.5
Library	3.8	3.0	3.4
Library	3.5	3.0	3.3
MPR	3.9	2.9	3.4
Building Service	Not Sampled	<0.3	<0.3



MCPS RADON TESTING

Executive Summary: Clopper Mill Elementary School

Date of Test Report:	3/14/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	5
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	3.0

Project Status:

Retesting completed; no further action at this time.



March 14, 2016

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

Re: **Radon Testing Services**
KCI Job # 12146341.29

Location: Clopper Mill Elementary School
18501 Cinnamon Drive
Germantown, Maryland 20874

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 Clopper Mill Elementary School, located at 18501 Cinnamon Drive in Germantown, Maryland 20874 (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 23, 2016 and deployed nine (9) 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 26, 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. Note that strong storms and heavy rainfall were recorded during the test period. The unusual weather conditions may have resulted in atypical radon test results for this facility.

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

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

Results:

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
≥ 4.0 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. 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 9 testing. Office blanks were not submitted under each school individually.

Radon Testing Results		
Clopper Mill Elementary School		
Test Period: 02/23/16-02/26/16		
Kit Number	Room / Area	Result
7718600	32	2.1
7718594	BUILDING SERVICE	< 0.3
7730096	LIBRARY	3.0
7730090	LIBRARY	3.0
7730095	MAIN OFFICE	1.5
7718595	MPR	2.0
7718598	MPR	2.9

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Clopper Mill Elementary School		
Test Period: 02/23/16-02/26/16		
Kit Number	QC Type	Result
7730093	D (MAIN OFFICE)	1.5
7730094	FB (MAIN OFFICE)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

March 8, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**CLOPPER MILL ELEMENTARY SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7718600	32	2016-02-23 @ 11:00 am	2016-02-26 @ 8:00 am	2.1 ± 0.4	2016-03-01
7718595	MPR	2016-02-23 @ 11:00 am	2016-02-26 @ 8:00 am	2.0 ± 0.3	2016-03-01
7718598	MPR	2016-02-23 @ 11:00 am	2016-02-26 @ 8:00 am	2.9 ± 0.4	2016-03-01
7718594	BUILDING SERVICE	2016-02-23 @ 11:00 am	2016-02-26 @ 8:00 am	< 0.3	2016-03-01
7730090	LIBRARY	2016-02-23 @ 11:00 am	2016-02-26 @ 8:00 am	3.0 ± 0.4	2016-03-01
7730096	LIBRARY	2016-02-23 @ 11:00 am	2016-02-26 @ 8:00 am	3.0 ± 0.4	2016-03-01
7730093	MAIN OFFICE	2016-02-23 @ 11:00 am	2016-02-26 @ 8:00 am	1.5 ± 0.3	2016-03-01
7730094	MAIN OFFICE	2016-02-23 @ 11:00 am	2016-02-26 @ 8:00 am	< 0.3	2016-03-01
7730095	MAIN OFFICE	2016-02-23 @ 11:00 am	2016-02-26 @ 8:00 am	1.5 ± 0.3	2016-03-01

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

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

Radon test result report for:
MCPS
Phase 9 Office Blanks

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

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

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

Radon test result report for:
MCPS
Phase 9 Office Blanks

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

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

February 23, 2016
LABORATORY ANALYSIS REPORT

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

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

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 μ R/h Elevation = 820 ft



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 9

Name of Schools:

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

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

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 9

Name of Schools:

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

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

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



MCPS RADON TESTING

Executive Summary: Clopper Mill Elementary School

Date of Test Report:	2/04/2016 (Rev 1)
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	53
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	3.9

Project Status:

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



February 4, 2016 (Rev 1)

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

Re: **Radon Testing Services**
KCI Job # 12146341.24

Location: Clopper Mill Elementary School
18501 Cinnamon Drive
Germantown, MD 20874

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 Clopper Mill Elementary School, located at 18501 Cinnamon Drive in Germantown, Maryland 20874 (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 January 11, 2016 and deployed sixty-five (65) 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 January 14, 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	none	n/a
< 4.0 pCi/L	See Attachment B	

Notes:
D- Duplicate sample

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

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

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

Sincerely,



H. Allen Bennett
Certified Industrial Hygienist
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		
Clopper Mill Elementary School		
Test Period: 01/11/16-01/14/16		
Kit Number	Room / Area	Result
7719239	1	0.6
7719237	2	1.3
7719236	3	< 0.3
7719214	4	0.9
7719227	5	0.6
7719230	6	1.3
7714690	7	< 0.3
7713490	8	< 0.3
7715279	9	0.6
7713128	10	0.7
7715280	11	1.6
7713139	12	1.6
7715278	13	0.8
7710513	14	2.1
7713117	15	0.7
7713180	16	1.4
7715269	17	< 0.3
7713103	18	< 0.3
7715283	19	0.6
7713496	20	< 0.3
7713152	21	0.6
7713200	22	< 0.3
7713140	23	< 0.3
7707315	24	0.8
7707278	25	2.9
7715277	26	< 0.3
7713494	27	2.6
7713129	28	0.9
7710681	29	1.7
7713183	31	1.8
7719218	* 32 (Tampered)	3.2
7710889	ART	2.6
7715270	ASST PRINCIPAL	2.2
7713478	CONFERENCE	0.8
7713141	GYM	< 0.3
7713480	GYM	1.7
7714945	GYM OFF	1.5
7713479	HEALTH	1.5
7719238	K1	0.8
7719205	K2	< 0.3
7719228	K3	< 0.3
7719222	K4	< 0.3
7719234	LIBRARY	3.8
7719240	LIBRARY	3.5
7719221	LIBRARY OFFICE	2.4
7714946	* MAIN OFF (Missing)	0

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Clopper Mill Elementary School		
Test Period: 01/11/16-01/14/16		
Kit Number	Room / Area	Result
7719232	ML1010	< 0.3
7719220	ML514	< 0.3
7719223	ML561	< 0.3
7719235	ML765	< 0.3
7714778	MPR	3.9
7719219	MPR	2.1
7715276	PRINCIPAL	2.1
7707277	STAFF LOUNGE	1.4
7719229	WEBBER	< 0.3
7715293	WORKROOM	1.6

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Clopper Mill Elementary School		
Test Period: 01/11/16-01/14/16		
Kit Number	QC Type	Result
7710891	D (ART)	2.8
7713101	D (GYM)	1.9
7713124	D (HEALTH)	1.6
7719231	D (ML561)	< 0.3
7715272	D (MPR)	3.3
7714692	FB (ART)	< 0.3
7713179	FB (HEALTH)	< 0.3
7707279	FB (MPR)	< 0.3
7719283	OB (0)	< 0.3

Table Note:

* Missing or Compromised Sample

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

ATTACHMENT C

Laboratory Analytical Results

February 4, 2016
LABORATORY ANALYSIS REPORT **

Radon test result report for:
**CLOPPER MILL ELEMENTARY SCHOOL
 MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7719283	0	2016-01-11 @ 1:00 pm	2016-01-14 @ 12:00 pm	< 0.3	2016-01-18
7719239	1	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	0.6 ± 0.3	2016-01-18
7713128	10	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	0.7 ± 0.3	2016-01-18
7715280	11	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	1.6 ± 0.3	2016-01-18
7713139	12	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	1.6 ± 0.4	2016-01-18
7715278	13	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	0.8 ± 0.3	2016-01-18
7710513	14	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	2.1 ± 0.4	2016-01-18
7713117	15	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	0.7 ± 0.3	2016-01-18
7713180	16	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	1.4 ± 0.3	2016-01-18
7715269	17	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7713103	18	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7715283	19	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	0.6 ± 0.3	2016-01-18
7719237	2	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	1.3 ± 0.3	2016-01-18
7713496	20	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7713152	21	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	0.6 ± 0.3	2016-01-18
7713200	22	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7713140	23	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7707315	24	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	0.8 ± 0.3	2016-01-18
7707278	25	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	2.9 ± 0.4	2016-01-18
7715277	26	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7713494	27	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	2.6 ± 0.4	2016-01-18
7713129	28	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	0.9 ± 0.3	2016-01-18
7710681	29	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	1.7 ± 0.4	2016-01-18
7719236	3	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7713183	31	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	1.8 ± 0.4	2016-01-18
7719218	32	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	3.2 ± 0.4	2016-01-18
7719214	4	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	0.9 ± 0.3	2016-01-18
7719227	5	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	0.6 ± 0.3	2016-01-18
7719230	6	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	1.3 ± 0.3	2016-01-18
7714690	7	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7713490	8	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7715279	9	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	0.6 ± 0.3	2016-01-18
7710889	ART	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	2.6 ± 0.4	2016-01-18
7710891	ART	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	2.8 ± 0.4	2016-01-18
7714692	ART	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7715270	ASST PRINCIPAL	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	2.2 ± 0.4	2016-01-18
7713478	CONFERENCE	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	0.8 ± 0.3	2016-01-18

February 4, 2016
****LABORATORY ANALYSIS REPORT****

Radon test result report for:

**CLOPPER MILL ELEMENTARY SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7713101	GYM	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	1.9 ± 0.4	2016-01-18
7713141	GYM	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	< 0.3	2016-01-18
7713480	GYM	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	1.7 ± 0.3	2016-01-18
7714945	GYM OFF	2016-01-11 @ 9:00 am	2016-01-14 @ 9:00 am	1.5 ± 0.3	2016-01-18
7713124	HEALTH	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	1.6 ± 0.4	2016-01-18
7713179	HEALTH	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	< 0.3	2016-01-18
7713479	HEALTH	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	1.5 ± 0.3	2016-01-18
7719238	K1	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	0.8 ± 0.3	2016-01-18
7719205	K2	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7719228	K3	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7719222	K4	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7719234	LIBRARY	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	3.8 ± 0.5	2016-01-18
7719240	LIBRARY	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	3.5 ± 0.4	2016-01-18
7719221	LIBRARY OFFICE	2016-01-11 @ 10:00 am	2016-01-14 @ 8:00 am	2.4 ± 0.4	2016-01-18
7714946	MAIN OFF	@	@		
7715272	MPR	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	3.3 ± 0.5	2016-01-18
7707279	MPR	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	< 0.3	2016-01-18
7714778	MPR	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	3.9 ± 0.5	2016-01-18
7715276	PRINCIPAL	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	2.1 ± 0.4	2016-01-18
7707277	STAFF LOUNGE	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	1.4 ± 0.3	2016-01-18
7719229	WEBBER	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7715293	WORKROOM	2016-01-11 @ 9:00 am	2016-01-14 @ 8:00 am	1.6 ± 0.4	2016-01-18

February 4, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**CLOPPER MILL ELEMENTARY SCHOOL
PORTABLE**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7719232	ML1010	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7719220	ML514	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7719223	ML561	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7719231	ML561	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7719235	ML765	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	< 0.3	2016-01-18
7719219	MPR	2016-01-11 @ 10:00 am	2016-01-14 @ 9:00 am	2.1 ± 0.4	2016-01-18

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

February 2, 2016
**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**MCPS PHASE 5 & 6
TRANSIT BLANKS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7722194	1	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718494	10	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718475	11	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718495	12	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718496	13	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718497	14	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718498	15	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718499	16	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718500	17	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718296	18	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718295	19	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722195	2	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716789	20	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716785	21	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-26
7716791	22	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716786	23	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716793	24	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718274	25	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716792	26	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718294	27	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718293	28	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718292	29	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722197	3	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718290	30	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722198	4	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722199	5	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722211	6	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718491	7	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718476	8	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-26
7718479	9	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27

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 V

Name of Schools:

- | | | |
|-------------------------|---------------------------|-------------------------|
| 1. Arcola ES | 11. Clopper Mill ES | 21. Parkland Magnet MS |
| 2. Argyle ES | 12. College Gardens ES | 22. Rachel Carson ES |
| 3. Bells Mill ES | 13. Eastern MS | 23. Roberto Clemente MS |
| 4. Bethesda ES | 14. Fallsmead ES | 24. Rock Creek ES |
| 5. Brookhaven ES | 15. Fields Road ES | 25. Rockview ES |
| 6. Burning Tree ES | 16. Flower Hill ES | 26. Rockville HS |
| 7. Capt. James Daly ES | 17. Flower Valley ES | 27. Rocky Hill MS |
| 8. Carderock Springs ES | 18. Fox Chapel ES | 28. Seneca Valley HS |
| 9. Cashell ES | 19. Glen Haven ES | 29. Westover ES |
| 10. Clearspring ES | 20. James Hubert Blake HS | 30. William Farquar MS |

	Date	Initials
Radon Test Kits Deployed	1/11/16	JM
Radon Test Kits Sampled	1/14/16	JM
Radon Test Kits Shipped to Lab*	1/15/16	JM
Radon Test Kits Received by Lab*	1/18/16	JM

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