

School / Facility Radon Testing Report Form

School Year: **24-25**

Facility:	Jones Lane Elementary School		
Address:	15110 Jones Lane		
	Darnestown, MD 20878		
Reason for Testing:	Scheduled Re-Testing - <input checked="" type="checkbox"/> 2-year or <input type="checkbox"/> 5-year schedule <input type="checkbox"/> Clearance Testing (Post-Mitigation) <input type="checkbox"/> Building Envelope or HVAC Upgrades <input type="checkbox"/> New Construction – Addition or 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 (New Facility)		
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 <input type="checkbox"/> Required (≥ 4.0 -pCi/L) Rooms:	<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)		
Number of Rooms Tested	57	Lowest Value (pCi/L)	<0.3
Number of Rooms (≥ 4.0 -pCi/L)	0	Highest Value (pCi/L)	2.1

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

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

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

Attachment 2 – Laboratory Report(s)

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

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)
Other—Specify here:		
Detector/Device Name:	Air Chek – Radon Test Kits	
Manufacturer:	Radon Labs	
Person(s) Deploying or Retrieving Test Devices and certification number		Organization/Company
Brittany Maas		KCI Technologies, Inc.
If noncertified individuals, the qualified measurement professional providing oversight -		
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):	2/25/2025
<input type="checkbox"/> Long-Term				2/28/2025
Does the test period include weekends, school breaks or holidays?				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If “Yes” please explain/detail in the space below:				
Was HVAC operating under occupied conditions?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If “No” please explain/detail in the space below:				

Testing (continued)

Round of Testing	Detectors Deployed				
	Ground-Contact		Upper-Level(s)		Total
	Initial	Follow-Up	Initial	Follow-Up	
Test Locations ¹	57	0	0	0	57
Duplicates ²	6	0	0	0	6
Field Blanks ³	3	0	0	0	3
Grand Total					66

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.

Round of Testing	QA/QC Samples		Total
	Initial	Follow-Up	
Spikes ¹	Not applicable		10
Trip Blanks ²	1	0	1
Office Blanks ^{3, 4}	1	0	1
			12

1 - 3% of EIC detectors; and 3% from each LOT of CAD and ATD detectors; a maximum of 6-spiked measurements per month for both EIC detectors and each LOT of CAD and ATD detectors.

2 – One per shipping container from start of detector deployment

3 – One per facility tested as devices are removed/allocated from the storage location for deployment;

4 - One additional blank, analyzed prior to deployment, for storage locations that have not been evaluated or monitored, for detectors that have been stored for more than 30-day durations.

Quality Assurance / Quality Control (continued)

Spike Sample Lab Results. Measured values are satisfactory, i.e., within $\pm 25\%$ 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 submitted testing organization's/company's QA plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Round of Testing	Initial Follow-Up
All Field, Trip and Office Blanks are \leq (less than or equal to) to the Method Detection Limit?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input checked="" type="checkbox"/> No
For all Duplicate Samples ¹ , the higher value is $\leq 2x$ the lower value?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input checked="" type="checkbox"/> No
For all Duplicate Samples ¹ , Relative Percent Difference(s) (RPD) ² are less than the Warning Level ³ ?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input checked="" type="checkbox"/> No
For all Duplicate Samples ¹ , Relative Percent Difference(s) (RPD) ² are less than the Control Level ³ ?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input checked="" type="checkbox"/> No

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

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

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

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

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

Summary of Test Results¹ and Determination of Valid Measurements²

Round of Testing	Ground-Contact		Upper-Level(s)		Total
	Initial	Follow-Up	Initial	Follow-Up	
Number of test locations:	57	0	0	0	57
Number of locations ≥ 8.0 -pCi/L:	0	0	0	0	0
Number of locations ≥ 4.0 and ≤ 8 -pCi/L:	0	0	0	0	0
Number of locations ≥ 2.7 and < 4 -pCi/L:	0	0	0	0	0
Number of locations ≥ 2.0 and < 2.7 -pCi/L:	2	0	0	0	2
Number of missing required test locations ³ :	0	0	0	0	0
Number of failed duplicate control locations:	0	0	0	0	0
Percentage of missing test locations for the facility ^{4,5} :	0	0	0	0	0

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

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

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

4 – if all valid measurements are < 4.0 -pCi/L and the total number of test locations are ≥ 18 , there is an allowance of $\leq 33\%$. 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)

Round of Testing	Initial	Follow-Up
Were test devices deployed in all occupied and intended to be occupied rooms in contact with the ground, and, if applicable, 10% of upper floor rooms?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" 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	<input type="checkbox"/> Yes <input checked="" 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 sufficient valid measurements obtained?^{1,2} <i>If Yes, then - ‘No Further Testing Needed’ complete Conclusion section on first page.</i> <i>If No, then - ‘Follow-up Testing Required’ continue below.</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	<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.

Follow-Up Testing

Required –

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

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

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

Attachment 1:

Summary Data Tables

Table 1- Radon Testing Results		
Jones Lane Elementary School		
Test Period: 2/25/2025 - 2/28/2025		
Kit Number	Room / Area	Result
11931689	2	< 0.3
11926887	3	1.8
11931268	4	< 0.3
11931274	4	< 0.3
11926893	5	1.4
11931282	6	< 0.3
11931202	7	0.7
11931293	8	< 0.3
11926891	9	1.3
11926896	10	< 0.3
11931285	11	1.2
11931297	12	1.9
11931288	14	< 0.3
11931294	15	1.3
11926875	16	< 0.3
11931289	17	< 0.3
11926876	18	< 0.3
11926892	19	< 0.3
11927499	20	< 0.3
11931260	21	< 0.3
11931287	22	< 0.3
11931280	23	< 0.3
11931276	24	< 0.3
11931284	25	1.3
11931365	26	< 0.3
11931690	27	2.1
11927488	28	< 0.3
11927494	29	1.4
11927496	29	1.6
11919968	30	< 0.3
11919969	31	1.5
11927493	32	0.6
11927484	31 OFFICE	2.1
11919966	32 OFFICE	< 0.3
11931273	A12	< 0.3
11931286	A12	< 0.3
11931298	A12	0.5

Table 1- Radon Testing Results		
Jones Lane Elementary School		
Test Period: 2/25/2025 - 2/28/2025		
Kit Number	Room / Area	Result
11926883	APR	1.2
11926884	APR	0.8
11927475	ASP	< 0.3
11926886	BUILDING SERVICE OFFICE	< 0.3
11919967	CONFERENCE	< 0.3
11931283	COU	< 0.3
11926888	GYM	1.0
11926894	GYM	1.1
11926895	GYM OFFICE	< 0.3
11931275	HEALTH ROOM	< 0.3
11919970	MAIN OFFICE	< 0.3
11931266	MEDIA CENTER	< 0.3
11931267	MEDIA WORKROOM	< 0.3
11931278	MEDIA WORKROOM	< 0.3
11931251	MILLER	< 0.3
11927483	PAREDES	< 0.3
11926899	PRINCIPAL	< 0.3
11926897	SD	0.6
11919972	SPEECH	< 0.3
11931277	SPEECH	< 0.3
11931279	SPEECH	< 0.3
11931201	SPT	< 0.3
11931290	STAFF LOUNGE	< 0.3
11927492	TV	< 0.3
11926881	V	0.8
11926898	V	< 0.3
11926900	V	0.7
11919965	WORKROOM	< 0.3
11927476	WORKROOM 2	< 0.3

[illegible]

Table 3 - QC Radon Testing Results			
Jones Lane Elementary School			
Test Period: 2/25/2025 - 2/28/2025			
Kit Number	QC Type	Room / Area	Result
11931268	D	4	< 0.3
11927494	D	29	1.4
11931286	D	A12	< 0.3
11931273	FB	A12	< 0.3
11931267	D	Media Workroom	< 0.3
11931277	D	Speech	< 0.3
11919972	FB	Speech	< 0.3
11926881	D	V	0.8
11926898	FB	V	< 0.3
11926885	OB	OFFICE BLANK	< 0.3
11926889	TB	TRAVEL BLANK	< 0.3

Table 3a - Duplicate Worksheet / Data Validation										
Jones Lane Elementary School										
Test Period: 2/25/2025 - 2/28/2025										
Sample ID			Duplicate Concentrations (pCi/L) and OC Checks							
Kit Numbers		Room / Area	Higher	Lower	Check #1 (Pass/Fail)	2x the Lower	Check #2 (Pass/Fail)	Average	Relative Percent Difference (RPD)	Check #3
11931268	11931274	4	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11927494	11927496	29	1.6	1.4	✓	2.8	PASS	1.5	<1-pCi/L	✓
11931273	11931286	A12	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11931267	11931278	Media Workroom	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11931277	11931279	Speech	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11926881	11926900	V	0.8	0.7	✓	1.4	PASS	0.8	<1-pCi/L	✓
NOTES: QC Check #1 - Data Entry QC Check #2 - Higher duplicate concentration is < or = to 2x the Lower QC Check #3 - Meets RPD Limits, by average duplicate concentration - enter 2 if RPD is BELOW warning and control levels, AND passes QC Check 1 and 2 - enter 1 if RPD is ABOVE warning and BELOW control levels, AND passes QC Check 1 and 2 - enter 0 if RPD is ABOVE control level, or 'FAILS' QC Check 1 or 2							Average (pCi/L)		Warning Level	Control Level
							< 2.0		1-pCi/L	NA
							Between 2.0 and 3.9		50% RPD	67% RPD
							≥ 4.0		28% RPD	36% RPD

[illegible]

Attachment 2:

Laboratory Reports

Radon test result report for:**JONES LANE ES
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11926896	10	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931285	11	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	1.2 ± 0.4	2025-03-04
11931297	12	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	1.9 ± 0.4	2025-03-04
11931288	14	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931294	15	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	1.3 ± 0.4	2025-03-04
11926875	16	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931289	17	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11926876	18	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11926892	19	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931689	2	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11927499	20	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931260	21	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931287	22	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3 Z	2025-03-04
11931280	23	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931276	24	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931284	25	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	1.3 ± 0.3	2025-03-04
11931365	26	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931690	27	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	2.1 ± 0.4	2025-03-04
11927488	28	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11927494	29	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	1.4 ± 0.4	2025-03-04
11927496	29	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	1.6 ± 0.4	2025-03-04
11926887	3	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	1.8 ± 0.4	2025-03-04
11919968	30	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11919969	31	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	1.5 ± 0.4	2025-03-04
11927484	31 OFFICE	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	2.1 ± 0.4	2025-03-04
11927493	32	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	0.6 ± 0.3	2025-03-04
11919966	32 OFFICE	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931268	4	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931274	4	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11926893	5	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	1.4 ± 0.4	2025-03-04
11931282	6	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931202	7	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	0.7 ± 0.4	2025-03-04
11931293	8	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11926891	9	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	1.3 ± 0.4	2025-03-04
11931298	A12	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	0.5 ± 0.3	2025-03-04
11931273	A12	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931286	A12	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04

Radon test result report for:**JONES LANE ES
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11926884	APR	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	0.8 ± 0.3	2025-03-04
11926883	APR	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	1.2 ± 0.4	2025-03-04
11927475	ASP	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11926886	BUILDING SERVICE OFFICE	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11919967	CONFERENCE	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931283	COU	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11926888	GYM	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	1.0 ± 0.4	2025-03-04
11926894	GYM	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	1.1 ± 0.3	2025-03-04
11926895	GYM OFFICE	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931275	HEALTH ROOM	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11919970	MAIN OFFICE	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931266	MEDIA CENTER	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931278	MEDIA WORKROOM	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931267	MEDIA WORKROOM	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931251	MILLER	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11927483	PAREDES	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11926899	PRINCIPAL	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11926897	SD	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	0.6 ± 0.3	2025-03-04
11931277	SPEECH	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931279	SPEECH	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11919972	SPEECH	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931201	SPT	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11931290	STAFF LOUNGE	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11927492	TV	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11926898	V	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11926881	V	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	0.8 ± 0.4	2025-03-04
11926900	V	2025-02-25 @ 12:00 pm	2025-02-28 @ 10:00 am	0.7 ± 0.3	2025-03-04
11919965	WORKROOM	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04
11927476	WORKROOM 2	2025-02-25 @ 11:00 am	2025-02-28 @ 10:00 am	< 0.3	2025-03-04

March 4, 2025

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**OFFICE
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11926885	OB	2025-02-25 @ 11:00 am	2025-02-28 @ 11:00 am	< 0.3	2025-03-04

March 4, 2025

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**TRAVEL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11926889	TB	2025-02-25 @ 11:00 am	2025-02-28 @ 11:00 am	< 0.3	2025-03-04

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI TECHNOLOGIES, INC Job Number 20001560

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

Date Start: 12/14/24 Date Stop: 12/17/24 Date Start: _____ Date Stop: _____

Time Start: 0815 Time Stop: 0815 Time Start: _____ Time Stop: _____

Device No.'s: (3) CHAR BAGS Device No.'s: _____

11477880, 11477883, 11477896 _____

B4 Right

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

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

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

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

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

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

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

December 23, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**SK
MAIN**

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI TECHNOLOGIES, INC Job Number 20002919

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

Date Start: 3/7/25 Date Stop: 3/10/25 Date Start: _____ Date Stop: _____

Time Start: 0832 Time Stop: 0832 Time Start: _____ Time Stop: _____

Device No.'s: (7) CHAR BAGS Device No.'s: _____

11886401 thru 11886406,

11886410

G3 Right

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

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

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

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

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

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

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

March 19, 2025

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

QC
MAIN

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

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



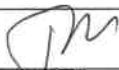



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Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Testing February 25th – February 28th, 2025

Name of Schools:

1. Gaithersburg MS
2. Germantown ES
3. William B Gibbs ES
4. Goshen ES
5. Great Seneca Creek ES
6. Jones Lane ES
7. MLK Jr. MS
8. Lake Seneca ES
9. Laytonsville ES

	Date	Initials
Radon Test Kits Deployed	2/25/2025	
Radon Test Kits Collected	2/28/2025	
Radon Test Kits Shipped to Lab*	2/28/2025	
Radon Test Kits Received by Lab*	3/3/2025	

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



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Jones Lane Elementary School
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	1
# Rooms \geq 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.6 pCi/L

Project Status

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



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: Jones Lane Elementary School
15110 Jones Lane
Gaithersburg, MD 20878

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 Jones Lane Elementary School, located at 15110 Jones Lane, Gaithersburg, MD 20878 (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 three (3) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

1. Rooms with missing test kits from the Radon 2022 testing period (i.e. test kit was deployed but not recovered),
2. Rooms with invalidated test kits from the Radon 2022 testing period (e.g. an open window in the room or disturbed test kit),
3. Rooms which were locked/inaccessible during the Radon 2022 testing period,
4. Rooms with elevated radon results (i.e. ≥ 3.5 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		
Jones Lane ES RT		
Test Period: 03/28/2022 - 03/31/2022		
Kit Number	Room / Area	Result
11139934	STAFF DEVELOPMENT	< 0.3
11139940	STAFF DEVELOPMENT	1.4
11139945	STAFF DEVELOPMENT	1.6

Table 2- Radon Testing Results			
Jones Lane ES RT			
Test Period: 03/28/2022 - 03/31/2022			
Kit Number	QC Type	Room / Area	Result
11139940	D	Staff Development Office	1.4
11139934	FB	Staff Development Office	< 0.3
11139883	OB	OFFICE BLANK	< 0.3
11139841	TB	TRAVEL BLANK	< 0.3

ATTACHMENT C

Laboratory Analytical Results

April 21, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
JONES LANE ES RT
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11139934	STAFF DEVELOPMENT	2022-03-28 @ 10:00 am	2022-03-31 @ 10:00 am	< 0.3	2022-04-04
11139940	STAFF DEVELOPMENT	2022-03-28 @ 9:00 am	2022-03-31 @ 10:00 am	1.4 ± 0.3	2022-04-04
11139945	STAFF DEVELOPMENT	2022-03-28 @ 9:00 am	2022-03-31 @ 10:00 am	1.6 ± 0.3	2022-04-04

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EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 204620

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

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

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

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

11139367, 11139368, 11139371, _____

11139710, 11139717 _____

E3 Right

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

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

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

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

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

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

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

March 30, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

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

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

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



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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	Jones Lane Elementary School
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	54
# Rooms ≥ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.6 pCi/L

Project Status:

Initial testing completed; Missing 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: Jones Lane ES
15110 Jones Lane
Gaithersburg, MD 20878

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 Jones Lane ES, located at 15110 Jones Lane Gaithersburg, MD 20878 (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 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 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	NA	NA
<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		
Jones Lane ES		
Test Period: 02/22/2022 - 02/25/2022		
Kit Number	Room / Area	Result
11130304	1	0.7
11130362	1	1.0
11130306	2	< 0.3
11130303	3	1.5
11130307	4	0.8
11130305	5	1.6
11130321	6	< 0.3
11130351	6	< 0.3
11130308	7	0.9
11130311	8	< 0.3
11130313	9	< 0.3
11130314	9	0.9
11130322	10	0.8
11130338	11	1.4
11130316	12	1.5
11130323	14	< 0.3
11130353	14	< 0.3
11130320	15	0.9
11130324	16	0.7
11130329	17	< 0.3
11123075	18	< 0.3
11130331	19	< 0.3
11130328	20	0.9
11130327	21	< 0.3
11130309	22	< 0.3
11130350	23	< 0.3
11130312	24	< 0.3
11130332	24	< 0.3
11130336	25	0.6
11130337	26	0.6
11130310	27	1.1
11130333	27	1.1
11130334	28	< 0.3
11130326	29	1.2
11123077	30	< 0.3
11130335	31	< 0.3
11130325	32	< 0.3
11130315	9 OFFICE	1.2
11130352	A12	< 0.3
11130346	APR	< 0.3
11130348	APR	1.1
11130341	ASP	< 0.3
11130318	BUILDING SERVICE OFFICE	< 0.3
11130342	CONFERENCE	< 0.3
11130330	COUNSELOR	< 0.3

Table 1- Radon Testing Results		
Jones Lane ES		
Test Period: 02/22/2022 - 02/25/2022		
Kit Number	Room / Area	Result
11130345	ESOL	< 0.3
11130349	ESOL	< 0.3
11130355	GYM	< 0.3
11130361	GYM	1.1
11130360	GYM OFFICE	< 0.3
11130340	MAIN OFFICE	< 0.3
11130357	MEDIA CENTER	< 0.3
11123040	MEDIA CENTER OFFICE	< 0.3
11130344	NURSE	< 0.3
11130319	OFFICE 5	0.9
11130347	PR	< 0.3
11130339	SECRETARY	< 0.3
11123052	SPEECH	< 0.3
11130317	SPEECH	< 0.3
11130354	STAFF LOUNGE	< 0.3
11130358	TV ROOM	< 0.3
11130343	WORKROOM	0.6
11123055	WORKROOM2	1.3
11123097	WORKROOM2	0.9

Table 2- Radon Testing Results			
Jones Lane ES			
Test Period: 02/22/2022 - 02/25/2022			
Kit Number	QC Type	Room / Area	Result
11130304	D	1	0.7
11130313	D	9	< 0.3
11130351	FB	6	< 0.3
11130323	D	14	< 0.3
11130349	D	Esol	< 0.3
11130332	FB	24	< 0.3
11130333	D	27	1.1
11123055	D	Workroom2	1.3
11130317	FB	Speech	< 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:
JONES LANE ES
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11130304	1	2022-02-22 @ 10:00 am	2022-02-25 @ 10:00 am	0.7 ± 0.4	2022-03-03
11130362	1	2022-02-22 @ 10:00 am	2022-02-25 @ 10:00 am	1.0 ± 0.5	2022-03-03
11130322	10	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	0.8 ± 0.5	2022-03-03
11130338	11	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	1.4 ± 0.5	2022-03-03
11130316	12	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	1.5 ± 0.5	2022-03-03
11130323	14	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130353	14	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130320	15	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	0.9 ± 0.5	2022-03-03
11130324	16	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	0.7 ± 0.5	2022-03-03
11130329	17	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130331	19	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130306	2	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130328	20	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	0.9 ± 0.4	2022-03-03
11130327	21	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130309	22	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130350	23	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130332	24	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130312	24	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130336	25	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	0.6 ± 0.5	2022-03-03
11130337	26	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	0.6 ± 0.4	2022-03-03
11130310	27	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	1.1 ± 0.5	2022-03-03
11130333	27	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	1.1 ± 0.5	2022-03-03
11130334	28	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130326	29	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	1.2 ± 0.5	2022-03-03
11130303	3	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	1.5 ± 0.5	2022-03-03
11130335	31	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130325	32	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130307	4	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	0.8 ± 0.5	2022-03-03
11130305	5	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	1.6 ± 0.5	2022-03-03
11130321	6	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130351	6	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130308	7	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	0.9 ± 0.5	2022-03-03
11130311	8	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130314	9	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	0.9 ± 0.5	2022-03-03
11130313	9	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130315	9 OFFICE	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	1.2 ± 0.5	2022-03-03
11130352	A12	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03

March 3, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**JONES LANE ES
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11130348	APR	2022-02-22 @ 10:00 am	2022-02-25 @ 10:00 am	1.1 ± 0.5	2022-03-03
11130346	APR	2022-02-22 @ 10:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130341	ASP	2022-02-22 @ 10:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130318	BUILDING SERVICE OFFICE	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130342	CONFERENCE	2022-02-22 @ 10:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130330	COUNSELOR	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130349	ESOL	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130345	ESOL	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130361	GYM	2022-02-22 @ 10:00 am	2022-02-25 @ 10:00 am	1.1 ± 0.5	2022-03-03
11130355	GYM	2022-02-22 @ 10:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130360	GYM OFFICE	2022-02-22 @ 10:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130340	MAIN OFFICE	2022-02-22 @ 10:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130357	MEDIA CENTER	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130344	NURSE	2022-02-22 @ 10:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130319	OFFICE 5	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	0.9 ± 0.5	2022-03-03
11130347	PR	2022-02-22 @ 10:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130339	SECRETARY	2022-02-22 @ 10:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130317	SPEECH	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130354	STAFF LOUNGE	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130358	TV ROOM	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11130343	WORKROOM	2022-02-22 @ 10:00 am	2022-02-25 @ 10:00 am	0.6 ± 0.4	2022-03-03

March 3, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**JONES LANE ES
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11123075	18	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11123077	30	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11123040	MEDIA CENTER OFFICE	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11123052	SPEECH	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	< 0.3	2022-03-03
11123055	WORKROOM2	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	1.3 ± 0.5	2022-03-03
11123097	WORKROOM2	2022-02-22 @ 11:00 am	2022-02-25 @ 10:00 am	0.9 ± 0.5	2022-03-03

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 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 - Device No.'s: _____

11113484, 1112998, 20107126 _____

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 μ R/h Elevation = 820 ft

March 14, 2022

**** LABORATORY ANALYSIS REPORT ****

Pg 1 of 1

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

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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	PM
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



MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Jones Lane Elementary School
Date of Report	3/5/2020
Round of Testing	Initial Follow-up Post Remediation 2 year testing 5 year testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested	2
# Rooms ≥ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	0.9 pCi/L

Project Status

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



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3/5/2020

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

Re: Radon Testing Services

KCI Job #12146341.126

Location: Jones Lane Elementary School

15110 Jones lane
Gaithersburg, Maryland 20878

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 Jones Lane Elementary School, located at 15110 Jones lane in Gaithersburg, Maryland 20878 (subject site).

SCOPE OF SERVICES

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

KCI visited the site on 2/18/2020 and deployed four (4) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

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

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

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

As a quality control measure, KCI included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, KCI submitted nine (9) test kits to Bowser-Morner, Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner, Inc. prior to being returned to the laboratory for analysis.

KCI returned to the site on 2/21/2020 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a NRSB certified analytical laboratory for radon analysis (certification #ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

EVALUATION OF TESTING CONDITIONS

These tests represent:

- Follow-up to initial testing.

These tests were conducted to:

- Evaluate radon concentrations at the facility.

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the mid-20s to the lower-40s; and high temperatures ranged from the upper-30s to the upper-50s. Maximum sustained winds ranged from 13-21 miles per hour. Average humidity was approximately 50%. A total of .01 inches of rain were recorded during the testing period. The weather conditions during the testing period may have resulted in atypical radon test results for this facility.

RESULTS

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

The results of the radon test analysis indicated the following:

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

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

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

Sincerely,

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

Attachments:

A- Floor Plan with Test Locations

B - Tables 1-3, Radon Test Summary Spreadsheets

C- Laboratory Analytical Results

ATTACHMENT A

Floor Plan With Test Locations

Floor Plan Legend

X-Sample Location (in red)

X- Previous Sample Location

1- Not Samled; No Ground Contact

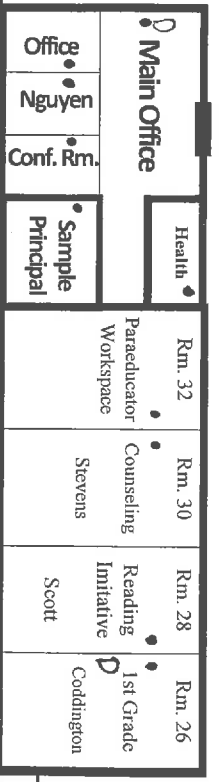
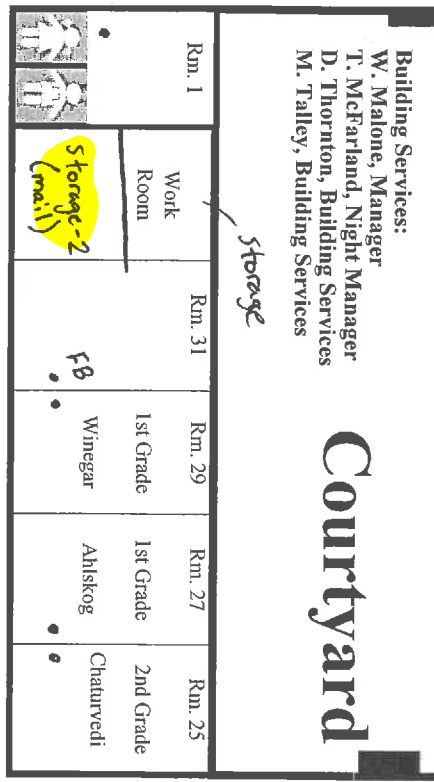
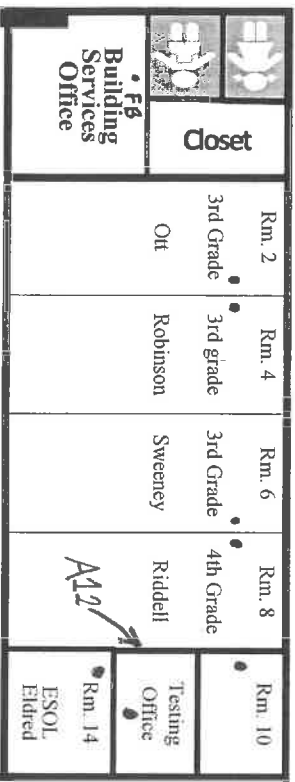
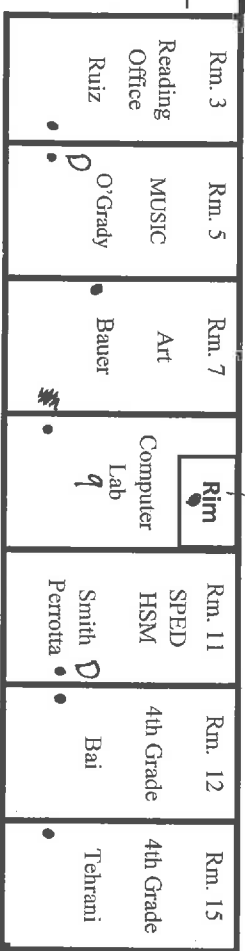
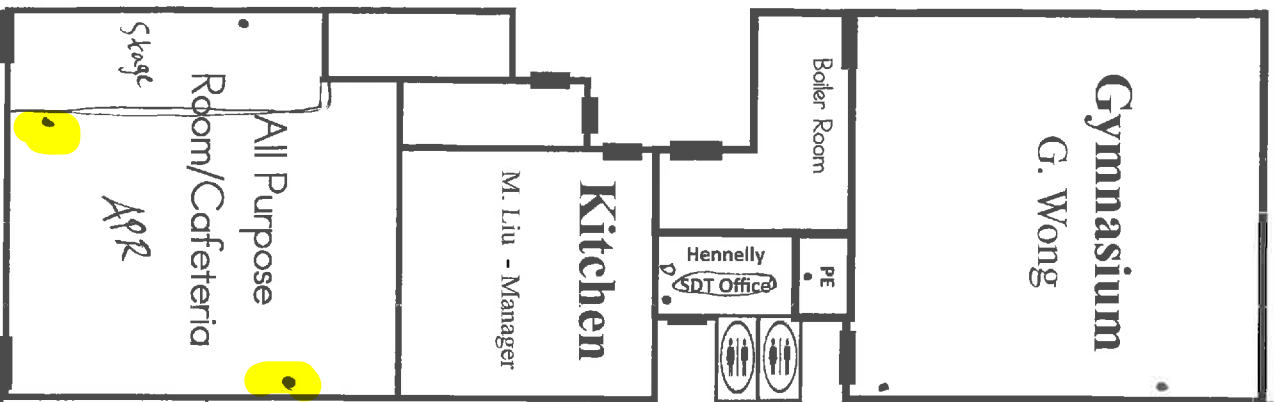
2- Not Samled; Unoccupied (e.g. Storage, Mechanical)

3- Not Samled; High Humidity/Moisture

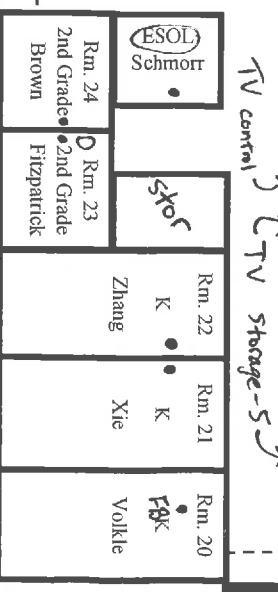
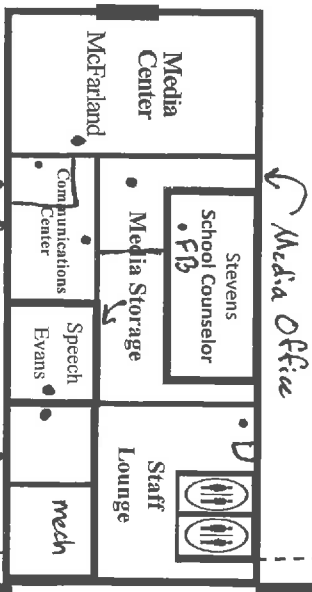
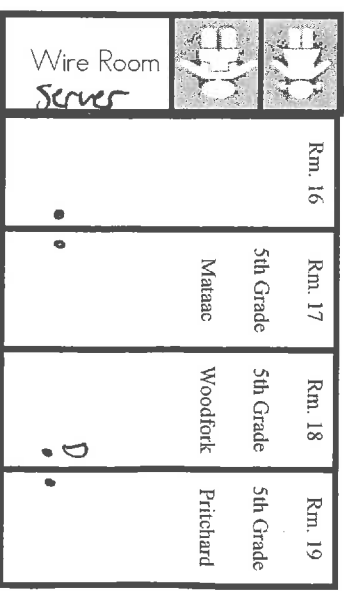
4- Not Samled; Bathroom/Hallway

BS off. -1
 Gym -2
 Gym off -1
 SDT off -1
 stage - 1
 mpr - 2

main off. -6
 14 normal
 1 blank
 2 duplicates
 17 total



2019 - 2020



Paradevator

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

Table 1- Radon Testing Results		
Jones Lane Elementary School		
Test Period: 02/18/20-02/21/20		
Kit Number	Room / Area	Result
9348551	APR	0.9
9348570	APR	0.7
9348572	COPIER ROOM 2	< 0.3
9348571	OFFICE BLANK	< 0.3

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

ATTACHMENT C

Laboratory Analytical Results

February 28, 2020

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

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

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

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March 5, 2020

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

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

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

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March 5, 2020

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

S

N/A

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

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 194523

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

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

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

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

9341725 thru 9341733 _____

52 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

[illegible]







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Radon Test Kit Chain of Custody

Project Name: MCPS Radon 2019 Week 3

Name of Schools:

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

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

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

MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Jones Lane Elementary School
Date of Report	1/28/2020
Round of Testing	Initial Follow-up Post Remediation 2 year testing 5 year testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested	54
# Rooms ≥ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.5 pCi/L

Project Status

Current Project Status at this time: Testing Complete; no further action.



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

1/28/2020

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

Re: Radon Testing Services

KCI Job #12146341126

Location: Jones Lane Elementary School

15110 Jones Lane
Gaithersburg, Maryland 20878

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 Jones Lane Elementary School, located at 15110 Jones Lane in Gaithersburg, Maryland 20878 (subject site).

SCOPE OF SERVICES

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Proficiency Program (NRPP) Radon Measurement Specialist (certification #111004 RT) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from <https://www.montgomeryschoolsmd.org/departments/facilities/maintenance/default.aspx?id=458858> or www.epa.gov/radon.

KCI visited the site on 12/10/2019 and deployed sixty-six (66) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

As a quality control measure, KCI included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, KCI submitted sixty (60) test kits to Bowser-Morner, Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner, Inc. prior to being returned to the laboratory for analysis.

KCI returned to the site on 12/13/2019 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a NRSB certified analytical laboratory for radon analysis (certification #ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

EVALUATION OF TESTING CONDITIONS

These tests represent:

- Follow-up to HVAC upgrade testing.

These tests were conducted to:

- Evaluate radon concentrations following the installation of a new HVAC system.

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the upper-30s and high temperatures ranged from the upper-30s to the mid-50s. Maximum sustained winds ranged from 7-21 miles per hour. Average humidity was around 75%. 0.52 inches of precipitation (rain) was recorded during the testing period.

RESULTS

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

The results of the radon test analysis indicated the following:

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

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

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

Sincerely,

Mr. Tyler P. McCleaf
Radon Measurement Provider
111004 RT

KCI Technologies, Inc.

Attachments:

A- Floor Plan with Test Locations

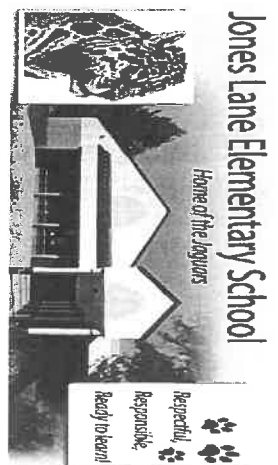
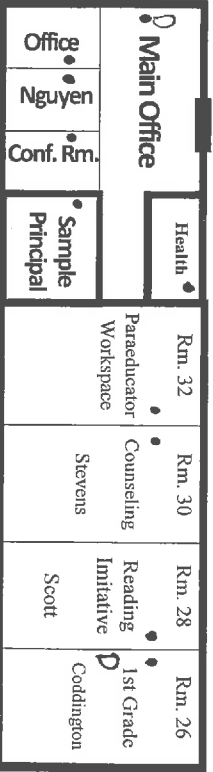
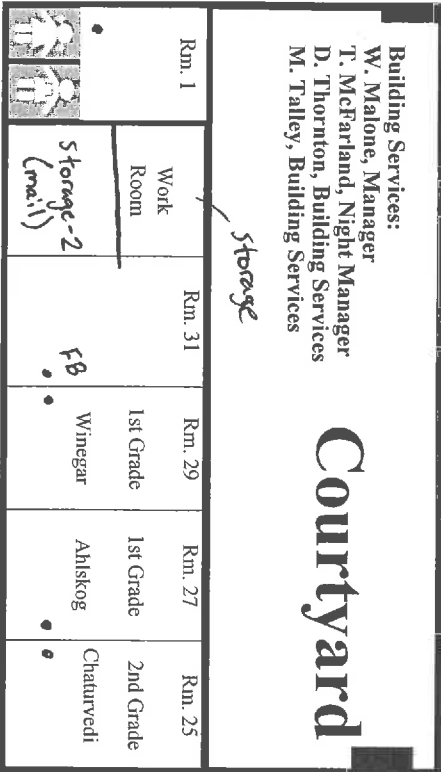
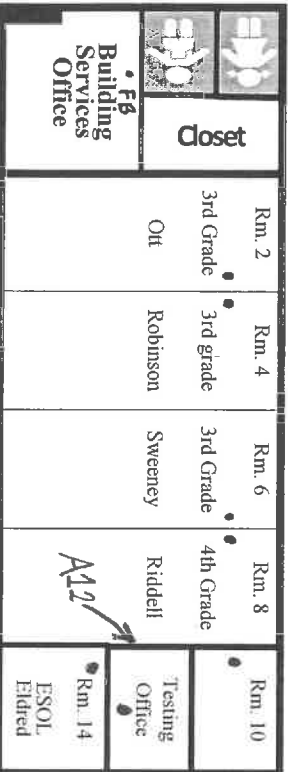
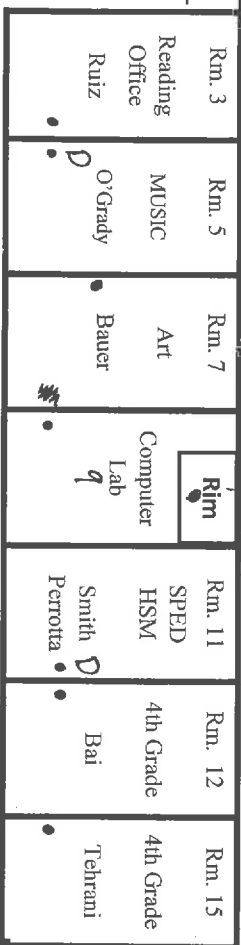
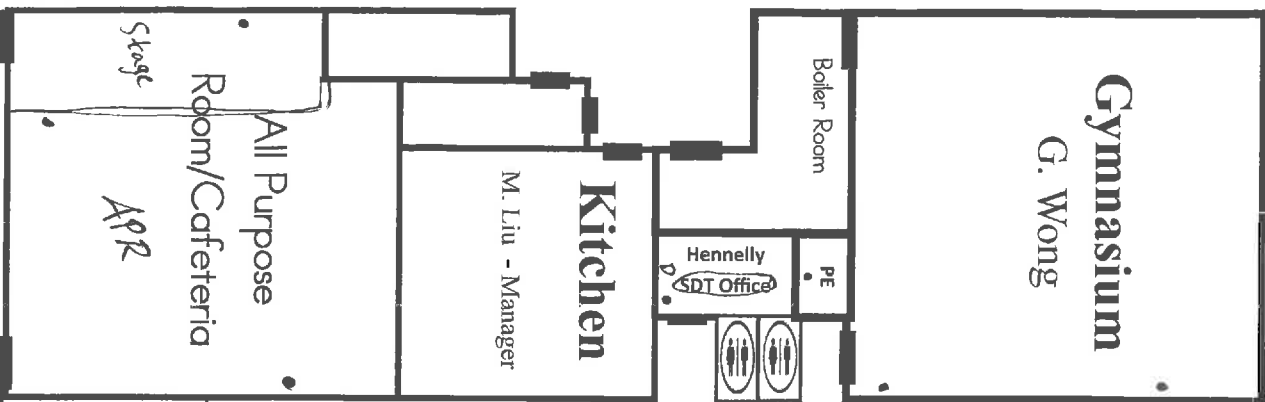
B - Tables 1-3, Radon Test Summary Spreadsheets

C- Laboratory Analytical Results

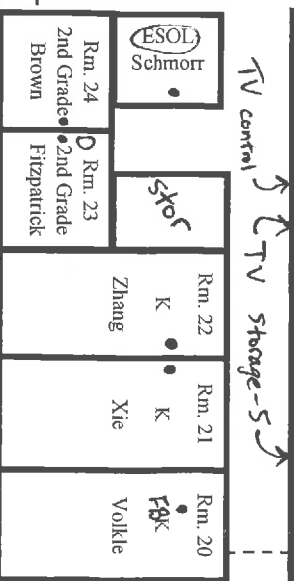
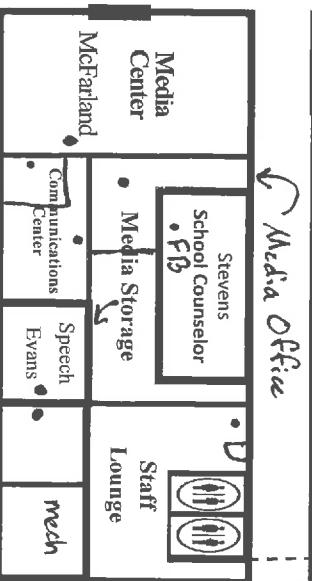
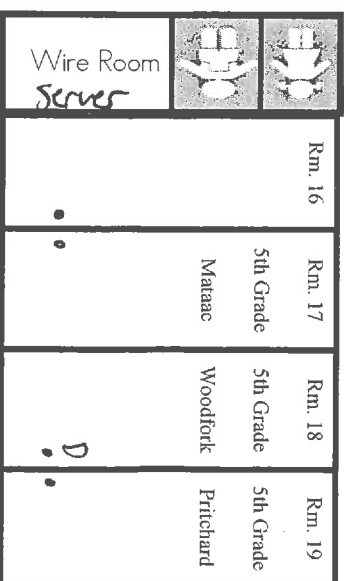
ATTACHMENT A

Floor Plan With Test Locations

BS off. -1
 Gym -2
 Gym off -1
 SDT off -1
 stage - 1
 mpr - 2
 main off. -6
 14 normal
 1 blank
 2 duplicates
 17 total



2019 - 2020



ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

Table 1- Radon Testing Results		
Jones Lane Elementary School		
Test Period: 12/10/2019-12/13/2019		
Kit Number	Room / Area	Result
9334102	1	0.8
9334103	31	< 0.3
9334104	29	1
9334105	31	0.8
9334106	32	< 0.3
9334107	30	0.6
9334108	26	0.5
9334109	25	< 0.3
9334110	28	0.7
9334111	MEDIA OFFICE	< 0.3
9334112	TV	< 0.3
9334113	TV CONTROL	< 0.3
9334114	27	1.1
9334115	IMC	0.5
9334116	26	0.6
9334117	SPEECH	< 0.3
9334118	24	< 0.3
9334119	23	< 0.3
9334120	22	< 0.3
9334121	ESOL	< 0.3
9334122	23	< 0.3
9334123	STORAGE - 5	0.6
9334124	10	< 0.3
9334125	20	0.5
9334126	20	< 0.3
9334127	A12	< 0.3
9334130	7	0.9
9334131	9 OFFICE	0.9
9334132	9	1.2
9335000	OFFICE BLANK	< 0.3
9335280	2	< 0.3
9335281	3	1
9335282	21	< 0.3
9335283	4	0.7
9335284	15	1.4
9335285	11	0.9
9335286	8	< 0.3
9335287	14	< 0.3
9335288	12	1.4
9335289	5	1.3
9335290	11	0.8
9335291	5	1.5
9335292	18	< 0.3
9335293	COU	< 0.3
9335294	COU	< 0.3
9335295	19	< 0.3
9335296	18	< 0.3
9335297	STAFF LOUNGE	< 0.3
9335298	16	< 0.3
9335299	17	0.6

9335300	6	1
9335402	GYM	< 0.3
9335403	GYM OFFICE	1.2
9335404	SDT	1.5
9335405	APR	1.4
9335406	SDT	1
9335407	BUILDING SERVICES	0.7
9335409	BUILDING SERVICES	< 0.3
9335410	STAGE	1.1
9335411	PRINCIPAL	< 0.3
9335412	CONFERENCE	< 0.3
9335413	ASSISTANT PRINCIPAL	0.5
9335418	OFFICE	0.6
9335419	HEALTH	< 0.3
9335420	OFFICE	< 0.3
9335421	PARAEDUCATOR	< 0.3

Table 2- Radon Testing Results			
Jones Lane Elementary School			
Test Period: 12/10/2019-12/13/2019			
Kit Number	QC Type	Room / Area	Result
9335292	D	18	<0.3
9335294	FB	COU	<0.3
9335285	D	11	0.9
9335291	D	5	1.5
9334126	FB	20	<0.3
9334122	D	23	<0.3
9334108	D	26	0.5
9334103	FB	31	<0.3
9335420	D	OFFICE	<0.3
9335406	D	SDT	1
9335409	FB	BUILDING SERVICES	<0.3
9334850	TRANSIT BLANK	NA	< 0.3
9334914	TRANSIT BLANK	NA	< 0.3
9334916	TRANSIT BLANK	NA	< 0.3
9334963	TRANSIT BLANK	NA	< 0.3

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:**JONES LANE ES
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9334102	1	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	0.8 ± 0.3	2019-12-16
9334124	10	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335285	11	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	0.9 ± 0.3	2019-12-16
9335290	11	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	0.8 ± 0.3	2019-12-16
9335288	12	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	1.4 ± 0.3	2019-12-16
9335287	14	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335284	15	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	1.4 ± 0.3	2019-12-16
9335298	16	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335299	17	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	0.6 ± 0.3	2019-12-16
9335292	18	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335296	18	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335295	19	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335280	2	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9334126	20	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9334125	20	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	0.5 ± 0.3	2019-12-16
9335282	21	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9334120	22	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9334119	23	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9334122	23	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9334118	24	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9334109	25	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9334116	26	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	0.6 ± 0.3	2019-12-16
9334108	26	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	0.5 ± 0.3	2019-12-16
9334114	27	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	1.1 ± 0.3	2019-12-16
9334110	28	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	0.7 ± 0.3	2019-12-16
9334104	29	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	1.0 ± 0.3	2019-12-16
9335281	3	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	1.0 ± 0.3	2019-12-16
9334107	30	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	0.6 ± 0.3	2019-12-16
9334105	31	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	0.8 ± 0.3	2019-12-16
9334103	31	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9334106	32	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335283	4	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	0.7 ± 0.3	2019-12-16
9335289	5	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	1.3 ± 0.3	2019-12-16
9335291	5	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	1.5 ± 0.3	2019-12-16
9335300	6	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	1.0 ± 0.3	2019-12-16
9334130	7	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	0.9 ± 0.3	2019-12-16
9335286	8	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16

Radon test result report for:**JONES LANE ES
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9334132	9	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	1.2 ± 0.3	2019-12-16
9334131	9 OFFICE	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	0.9 ± 0.3	2019-12-16
9334127	A12	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335405	APR	2019-12-10 @ 4:00 pm	2019-12-13 @ 12:00 pm	1.4 ± 0.3	2019-12-16
9335413	ASSISTANT PRINCIPAL	2019-12-10 @ 4:00 pm	2019-12-13 @ 12:00 pm	0.5 ± 0.3	2019-12-16
9335409	BUILDING SERVICES	2019-12-10 @ 4:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335407	BUILDING SERVICES	2019-12-10 @ 4:00 pm	2019-12-13 @ 12:00 pm	0.7 ± 0.3	2019-12-16
9335412	CONFERENCE	2019-12-10 @ 4:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335294	COU	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335293	COU	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9334121	ESOL	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335402	GYM	2019-12-10 @ 4:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335403	GYM OFFICE	2019-12-10 @ 4:00 pm	2019-12-13 @ 12:00 pm	1.2 ± 0.3	2019-12-16
9335419	HEALTH	2019-12-10 @ 3:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9334115	IMC	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	0.5 ± 0.3	2019-12-16
9334111	MEDIA OFFICE	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335420	OFFICE	2019-12-10 @ 3:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335418	OFFICE	2019-12-10 @ 3:00 pm	2019-12-13 @ 12:00 pm	0.6 ± 0.3	2019-12-16
9335421	PARAEDUCATOR	2019-12-10 @ 4:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335411	PRINCIPAL	2019-12-10 @ 4:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335406	SDT	2019-12-10 @ 4:00 pm	2019-12-13 @ 12:00 pm	1.0 ± 0.3	2019-12-16
9335404	SDT	2019-12-10 @ 4:00 pm	2019-12-13 @ 12:00 pm	1.5 ± 0.3	2019-12-16
9334117	SPEECH	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335297	STAFF LOUNGE	2019-12-10 @ 1:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9335410	STAGE	2019-12-10 @ 4:00 pm	2019-12-13 @ 12:00 pm	1.1 ± 0.3	2019-12-16
9334123	STORAGE - 5	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	0.6 ± 0.3	2019-12-16
9334112	TV	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16
9334113	TV CONTROL	2019-12-10 @ 2:00 pm	2019-12-13 @ 12:00 pm	< 0.3	2019-12-16

December 17, 2019

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**JONES LANE ES
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9335401	GYM	2019-12-10 @ 4:00 pm	2019-12-13 @ 12:00 pm	0.6 ± 0.3	2019-12-16

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 193475

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

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

Date Start: _____ Date Stop: _____

Time Start: 0806 Time Stop: 0806

Time Start: _____ Time Stop: _____

(Group 1)

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

Device No.'s: _____

9334502 thru 9334519,
9334514, 9334516, 9334517,
9334519, 9334519
9334522 thru 9334528

B4

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

Date Start: _____ Date Stop: _____

0811

Time Start: 0806 acm Time Stop: 0811

Time Start: _____ Time Stop: _____

(Group 2)

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

Device No.'s: _____

9334529 thru 9334538,
9334540,
9334542 thru 9334550

B3

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

Date Start: _____ Date Stop: _____

Time Start: 0816 Time Stop: 0816

Time Start: _____ Time Stop: _____

(Group 3)

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

Device No.'s: _____

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

B2

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

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

December 18, 2019

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

N/A

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

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

December 18, 2019

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

S

N/A

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



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

Radon Test Kit Chain of Custody

Project Name: MCPS Radon 2019 Week 1

Name of Schools:

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

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

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

MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Jones Lane Elementary School
Date of Report	March 12, 2018
Round of Testing	Initial Follow-up Post Remediation 2 year testing 5 year testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested	5
# Rooms ≥ 4.0 pCi/L	0
Lowest Value	0.7 pCi/L
Highest Value	1.5 pCi/L

Project Status

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



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March 12, 2018

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

Re: Radon Testing Services

KCI Job #1214634188

Location: Jones Lane Elementary School

15110 Jones Ln.
Darnestown, Maryland 20878

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 Jones Lane Elementary School, located at 15110 Jones Ln. in Darnestown, Maryland 20878 (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 12, 2018 and deployed six (6) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

1. Rooms not successfully tested,
2. Rooms with elevated November 2017 results (i.e. ≥ 3.5 pCi/L).

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

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

KCI returned to the site on February 15, 2018 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a NRSB certified analytical laboratory for radon analysis (certification #ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

EVALUATION OF TESTING CONDITIONS

These tests represent:

- Follow-up to post-mitigation biennial testing.

These tests were conducted to:

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

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures ranged from the mid-20s to upper 40s and high temperatures ranged from the high-30s to the high-60s. Maximum sustained winds ranged from 10-15 miles per hour. Average humidity was around 69%. 0.05 Inches of precipitation was recorded during the testing period.

RESULTS

The sampling locations and analytical results are listed on Table 1 (Attachment B). The quality control sample locations and analytical results are listed on Table 2 (Attachment B). The laboratory analytical results are included in Attachment C. Laboratory results and exposure data for the spike samples are also included in Attachment C.

The results of the radon test analysis indicated the following:

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

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

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

Sincerely,



Radon Measurement Specialist
KCI Technologies, Inc.

Attachments:

B - Radon Test Summary Spreadsheets

C- Laboratory Analytical Results

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

Table 1 - Radon Testing Results		
Jones Lane Elementary School		
Test Period: 02/12/18-02/15/18		
Kit Number	Room / Area	Result
7984141	KITCHEN	1.5
7984137	MEDIA ROOM	0.9
7984164	SPEECH (Mechanical room)	0.7
7984138	STAFF ROOM	0.8
7984178	TESTING OFF/12A	0.8

Table Note:

* Missing or Compromised Sample

Table 2 - Radon Testing Results		
Jones Lane Elementary School		
Test Period: 02/12/18-02/15/18		
Kit Number	QC Type	Result
7984163	FB (STAFF ROOM)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

February 27, 2018

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**JONES LANE ELEMENTARY SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7984141	KITCHEN	2018-02-12 @ 11:00 am	2018-02-15 @ 10:00 am	1.5 ± 0.4	2018-02-19
7984137	MEDIA ROOM	2018-02-12 @ 11:00 am	2018-02-15 @ 10:00 am	0.9 ± 0.3	2018-02-19
7984164	SPEECH	2018-02-12 @ 11:00 am	2018-02-15 @ 10:00 am	0.7 ± 0.3	2018-02-19
7984138	STAFF ROOM	2018-02-12 @ 11:00 am	2018-02-15 @ 10:00 am	0.8 ± 0.3	2018-02-19
7984163	STAFF ROOM	2018-02-12 @ 11:00 am	2018-02-15 @ 10:00 am	< 0.3	2018-02-19
7984178	TESTING OFF/12A	2018-02-12 @ 11:00 am	2018-02-15 @ 10:00 am	0.8 ± 0.3	2018-02-19

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

Names of Schools:

- | | |
|--|--------------------------------------|
| 1. Highland Elementary School | 20. Bethesda Trans. and Maint. Depot |
| 2. Stephen Knolls Elementary School | 21. Sequoyah Elementary School |
| 3. Silver Creek Middle School | 22. Gaithersburg Middle School |
| 4. Woodlin Elementary School | 23. Wayside Elementary School |
| 5. Sligo Creek Elementary School | 24. Travilah Elementary School |
| 6. Francis Scott Key Middle School | 25. Damascus High School |
| 7. John T. Baker Middle School | 26. Jones Lane Elementary School |
| 8. Cedar Grove Elementary School | 27. Greencastle Elementary School |
| 9. Clarksburg Elementary School | 28. Spring Brook High School |
| 10. Clarksburg Elementary School Annex | 29. Montgomery Blair High School |
| 11. Fields Road Elementary School | 30. Watkins Mill High School |
| 12. Dufief Elementary School | |
| 13. Brown Station Elementary School | |
| 14. Diamond Elementary School | |
| 15. Fallsmeade Elementary School | |
| 16. Thomas Whootton High School | |
| 17. Lake Seneca Elementary School | |
| 18. Redland Middle School | |
| 19. Newport Mill Middle School | |

	Date	Initials
Radon Test Kits Deployed	2/12/18	JM
Radon Test Kits Collected	2/15/18	JM
Radon Test Kits Shipped to Lab*	2/15/18	JM
Radon Test Kits Received by Lab*	2/19/15	JM

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

February 27, 2018

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

OFFICE BLANKS

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7979482	1	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986991	10	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985684	11	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986987	12	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986993	13	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986990	14	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7979485	2	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985686	3	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986995	4	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986989	5	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986998	6	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986986	7	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986985	8	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986997	9	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20

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

February 27, 2018

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
TRANSIT BLANKS

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7984188	1	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7984044	10	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986582	11	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986999	12	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7987000	13	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7984196	14	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986996	2	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986994	3	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986992	4	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985680	5	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985698	6	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985699	7	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985700	8	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985872	9	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20

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

February 28, 2018

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

MCPS - Spike Sample Laboratory Results. Measured values are satisfactory, i.e. within $\pm 25\%$ of the chamber's reference value (20.9 pCi/L).

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7984181	1	2018-02-16 @ 11:00 am	2018-02-19 @ 11:00 am	19.7 ± 0.8	2018-02-21
7986621	2	2018-02-16 @ 11:00 am	2018-02-19 @ 11:00 am	19.4 ± 0.8	2018-02-21
7985683	3	2018-02-16 @ 11:00 am	2018-02-19 @ 11:00 am	19.5 ± 0.8	2018-02-21
7984168	4	2018-02-16 @ 11:00 am	2018-02-19 @ 11:00 am	20.5 ± 0.8	2018-02-21
7986618	5	2018-02-16 @ 11:00 am	2018-02-19 @ 11:00 am	19.9 ± 0.8	2018-02-21
7984169	6	2018-02-16 @ 11:00 am	2018-02-19 @ 11:00 am	20.4 ± 0.8	2018-02-21

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 183530

NOMINAL Conditions: Radon Conc 20.9 pCi/L Rel. Hum 49.8 % Temp. 79.1 F

Date Start: 2/16/18 Date Stop: 2/19/18 Date Start: _____ Date Stop: _____

Time Start: 1052 Time Stop: 1052 Time Start: _____ Time Stop: _____

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

7984181, 7986621, 7985683 _____

7984168, 7986618, 7984169 _____

G3 Middle _____

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

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

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

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

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

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

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

MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Jones Lane Elementary School
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	52
# Rooms ≥ 4.0 pCi/L	0
Lowest Value	< 0.3 pCi/L
Highest Value	2.8 pCi/L

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



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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: Jones Lane Elementary School

15110 Jones Lane,
Gaithersburg, Maryland 20878

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 Jones Lane Elementary School, located at 15110 Jones Lane, in Gaithersburg, Maryland 20878 (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 sixty-three (63) 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 blanks, 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 Moulds, 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		
Jones Lane Elementary School		
Test Period: 12/04/17-12/07/17		
Kit Number	Room / Area	Result
7975303	1	1.7
7975328	2	1.2
7975347	3	2.8
7975327	4	1.5
7975325	5	2.0
7975388	6	1.3
7975386	7	1.9
7975392	8	1.2
7975387	9	1.7
7975333	10	1.0
7975394	11	1.6
7975343	12	2.4
7975371	14	0.5
7975332	15	1.4
7975369	16	0.9
7975370	17	0.8
7975365	18	0.6
7975367	19	1.0
7975356	20	1.4
7975352	21	0.8
7975353	22	< 0.3
7975363	23	0.7
7975355	24	0.6
7975331	25	1.6
7975340	26	0.7
7975330	27	2.1
7975339	28	1.5
7975351	29	1.9
7975344	30	1.7
7975334	31	2.0
7975341	32	1.1
7975337	31A	2.1
7975345	AP	< 0.3
7975302	APR	2.2
7975301	APR	2.5
7975349	BSO	1.0
7975358	COMM CENTER	0.9
7975346	CONF	< 0.3
7975366	CONTROL ROOM	0.7
7975368	COUNSELOR	< 0.3
7975348	ESOL	< 0.3
7975350	GYM	1.3
7975390	GYM	1.8
7975329	HEALTH	0.9
7975362	IMC	< 0.3
7975360	IMC WORKROOM	0.9

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Jones Lane Elementary School		
Test Period: 12/04/17-12/07/17		
Kit Number	Room / Area	Result
7975324	MAIN OFFICE	0.6
7975326	PARA OFFICE	< 0.3
7975393	PE OFFICE	1.6
7975336	PRINCIPAL	0.7
7975391	SDT	2.6
7975359	SPEECH 1	0.7
7975305	STAFF LOUNGE	1.2
7975357	STORAGE 5	1.1

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Jones Lane Elementary School		
Test Period: 12/04/17-12/07/17		
Kit Number	QC Type	Result
7975304	D (1)	1.6
7975335	D (10)	0.5
7975354	D (22)	0.8
7975338	D (31A)	2.3
7975342	D (5)	2.3
7975364	D (COUNSELOR)	0.8
7975322	FB (1)	< 0.3
7975361	FB (COUNSELOR)	< 0.3
7983819	OB (OFFICE BLANK)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:**JONES LANE ELEMENTARY SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7975303	1	2017-12-04 @ 7:00 pm	2017-12-07 @ 10:00 am	1.7 ± 0.4	2017-12-11
7975304	1	2017-12-04 @ 6:00 pm	2017-12-07 @ 10:00 am	1.6 ± 0.4	2017-12-11
7975322	1	2017-12-04 @ 7:00 pm	2017-12-07 @ 10:00 am	< 0.3	2017-12-12
7975335	10	2017-12-04 @ 10:00 am	2017-12-07 @ 10:00 am	0.5 ± 0.3	2017-12-11
7975333	10	2017-12-04 @ 10:00 am	2017-12-07 @ 10:00 am	1.0 ± 0.4	2017-12-12
7975394	11	2017-12-04 @ 4:00 pm	2017-12-07 @ 10:00 am	1.6 ± 0.4	2017-12-11
7975343	12	2017-12-04 @ 4:00 pm	2017-12-07 @ 10:00 am	2.4 ± 0.4	2017-12-12
7975371	14	2017-12-04 @ 4:00 pm	2017-12-07 @ 10:00 am	0.5 ± 0.3	2017-12-11
7975332	15	2017-12-04 @ 4:00 pm	2017-12-07 @ 10:00 am	1.4 ± 0.4	2017-12-11
7975369	16	2017-12-04 @ 4:00 pm	2017-12-07 @ 10:00 am	0.9 ± 0.4	2017-12-12
7975370	17	2017-12-04 @ 4:00 pm	2017-12-07 @ 10:00 am	0.8 ± 0.4	2017-12-11
7975365	18	2017-12-04 @ 4:00 pm	2017-12-07 @ 10:00 am	0.6 ± 0.4	2017-12-11
7975367	19	2017-12-04 @ 4:00 pm	2017-12-07 @ 10:00 am	1.0 ± 0.4	2017-12-11
7975328	2	2017-12-04 @ 6:00 pm	2017-12-07 @ 10:00 am	1.2 ± 0.4	2017-12-11
7975356	20	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	1.4 ± 0.4	2017-12-11
7975352	21	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	0.8 ± 0.4	2017-12-11
7975353	22	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	< 0.3	2017-12-11
7975354	22	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	0.8 ± 0.4	2017-12-11
7975363	23	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	0.7 ± 0.4	2017-12-12
7975355	24	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	0.6 ± 0.4	2017-12-11
7975331	25	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	1.6 ± 0.4	2017-12-12
7975340	26	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	0.7 ± 0.4	2017-12-12
7975330	27	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	2.1 ± 0.4	2017-12-11
7975339	28	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	1.5 ± 0.4	2017-12-12
7975351	29	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	1.9 ± 0.5	2017-12-12
7975347	3	2017-12-04 @ 6:00 pm	2017-12-07 @ 10:00 am	2.8 ± 0.4	2017-12-11
7975344	30	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	1.7 ± 0.4	2017-12-11
7975334	31	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	2.0 ± 0.4	2017-12-12
7975337	31A	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	2.1 ± 0.4	2017-12-11
7975338	31A	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	2.3 ± 0.5	2017-12-12
7975341	32	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	1.1 ± 0.3	2017-12-11
7975327	4	2017-12-04 @ 6:00 pm	2017-12-07 @ 10:00 am	1.5 ± 0.4	2017-12-12
7975325	5	2017-12-04 @ 6:00 pm	2017-12-07 @ 10:00 am	2.0 ± 0.4	2017-12-11
7975342	5	2017-12-04 @ 6:00 pm	2017-12-07 @ 10:00 am	2.3 ± 0.4	2017-12-11
7975388	6	2017-12-04 @ 6:00 pm	2017-12-07 @ 10:00 am	1.3 ± 0.4	2017-12-12
7975386	7	2017-12-04 @ 6:00 pm	2017-12-07 @ 10:00 am	1.9 ± 0.4	2017-12-11
7975392	8	2017-12-04 @ 6:00 pm	2017-12-07 @ 10:00 am	1.2 ± 0.4	2017-12-12

Radon test result report for:**JONES LANE ELEMENTARY SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7975387	9	2017-12-04 @ 6:00 pm	2017-12-07 @ 10:00 am	1.7 ± 0.4	2017-12-11
7975345	AP	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	< 0.3	2017-12-11
7975302	APR	2017-12-04 @ 6:00 pm	2017-12-07 @ 10:00 am	2.2 ± 0.4	2017-12-11
7975301	APR	2017-12-04 @ 6:00 pm	2017-12-07 @ 10:00 am	2.5 ± 0.5	2017-12-12
7975349	BSO	2017-12-04 @ 6:00 pm	2017-12-07 @ 10:00 am	1.0 ± 0.3	2017-12-11
7975358	COMM CENTER	2017-12-04 @ 3:00 pm	2017-12-07 @ 10:00 am	0.9 ± 0.4	2017-12-12
7975346	CONF	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	< 0.3	2017-12-12
7975366	CONTROL ROOM	2017-12-04 @ 3:00 pm	2017-12-07 @ 10:00 am	0.7 ± 0.4	2017-12-12
7975361	COUNSELOR	2017-12-04 @ 4:00 pm	2017-12-07 @ 10:00 am	< 0.3	2017-12-11
7975368	COUNSELOR	2017-12-04 @ 4:00 pm	2017-12-07 @ 10:00 am	< 0.3	2017-12-11
7975364	COUNSELOR	2017-12-04 @ 4:00 pm	2017-12-07 @ 10:00 am	0.8 ± 0.4	2017-12-11
7975348	ESOL	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	< 0.3	2017-12-12
7975350	GYM	2017-12-04 @ 6:00 pm	2017-12-07 @ 10:00 am	1.3 ± 0.4	2017-12-11
7975390	GYM	2017-12-04 @ 6:00 pm	2017-12-07 @ 10:00 am	1.8 ± 0.4	2017-12-12
7975329	HEALTH	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	0.9 ± 0.4	2017-12-12
7975362	IMC	2017-12-04 @ 3:00 pm	2017-12-07 @ 10:00 am	< 0.3	2017-12-11
7975360	IMC WORKROOM	2017-12-04 @ 3:00 pm	2017-12-07 @ 10:00 am	0.9 ± 0.3	2017-12-11
7975324	MAIN OFFICE	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	0.6 ± 0.4	2017-12-11
7983819	OFFICE BLANK	2017-12-04 @ 11:00 am	2017-12-07 @ 11:00 am	< 0.3	2017-12-11
7975326	PARA OFFICE	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	< 0.3	2017-12-11
7975393	PE OFFICE	2017-12-04 @ 6:00 pm	2017-12-07 @ 10:00 am	1.6 ± 0.4	2017-12-11
7975336	PRINCIPAL	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	0.7 ± 0.3	2017-12-11
7975391	SDT	2017-12-04 @ 6:00 pm	2017-12-07 @ 10:00 am	2.6 ± 0.4	2017-12-11
7975359	SPEECH 1	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	0.7 ± 0.3	2017-12-11
7975305	STAFF LOUNGE	2017-12-04 @ 4:00 pm	2017-12-07 @ 10:00 am	1.2 ± 0.4	2017-12-12
7975357	STORAGE 5	2017-12-04 @ 3:00 pm	2017-12-07 @ 9:00 am	1.1 ± 0.4	2017-12-12



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase

Names of Schools:

- | | |
|---------------------------------------|----------------------------------|
| 1. Brooke Grove Elementary School | 14. Newport Mill Middle School |
| 2. Brown Station Elementary School | 15. Oakview Elementary School |
| 3. Diamond Elementary School Addition | 16. Quince Orchard High School |
| 4. Dufief Elementary School | 17. Robert Frost Middle School |
| 5. Emory Grove Center | 18. Rosa Parks Middle School |
| 6. Fields Road Elementary School | 19. South Lake 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 | |

	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 2
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7193838	TRANSIT 1	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7979384	TRANSIT 10	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7979385	TRANSIT 11	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7984056	TRANSIT 12	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7983834	TRANSIT 13	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7194097	TRANSIT 14	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7194092	TRANSIT 15	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7193840	TRANSIT 16	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7979072	TRANSIT 17	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7979071	TRANSIT 18	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7979065	TRANSIT 19	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	0.6 ± 0.4	2017-12-13
7978194	TRANSIT 2	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7985660	TRANSIT 20	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7985661	TRANSIT 21	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	0.7 ± 0.4	2017-12-13
7193843	TRANSIT 22	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7984055	TRANSIT 23	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7983813	TRANSIT 24	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7983827	TRANSIT 25	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7978193	TRANSIT 3	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7978189	TRANSIT 4	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	0.5 ± 0.4	2017-12-13
7986187	TRANSIT 5	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7986188	TRANSIT 6	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7986177	TRANSIT 7	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7979077	TRANSIT 8	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7979386	TRANSIT 9	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13

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) Chan. 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: Jones Lane Elementary School

Date of Test Report:	10/19/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	4
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	0.6

Project Status:

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



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

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: Jones Lane Elementary School
15110 Jones Lane
Gaithersburg, MD 20878

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 Jones Lane Elementary School, located at 15110 Jones Lane in Gaithersburg, Maryland 20878 (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 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 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 lab transit blanks and office blanks had test results of less than the laboratory detection limit of 0.3 pCi/L. Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved. The Spike sample analysis results indicate the laboratory is operating within statistical control limits.

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

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

Sincerely,



James M. 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		
Jones Lane Elementary School		
Test Period: 09/27/16-09/30/16		
Kit Number	Room / Area	Result
7714272	19	< 0.3
7714282	* LOUNGE (Tampered)	< 0.3
7714279	PART TIME 2	< 0.3
7714276	SPEECH 1	0.6

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Jones Lane Elementary School		
Test Period: 09/27/16-09/30/16		
Kit Number	QC Type	Result
7714277	D (PART TIME 2)	0.6

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

October 7, 2016

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**JONES LANE ELEMENTARY SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7714272	19	2016-09-27 @ 3:00 pm	2016-09-30 @ 12:00 pm	< 0.3	2016-10-03
7714282	LOUNGE	2016-09-27 @ 3:00 pm	2016-09-30 @ 12:00 pm	< 0.3	2016-10-03
7714276	SPEECH 1	2016-09-27 @ 3:00 pm	2016-09-30 @ 12:00 pm	0.6 ± 0.3	2016-10-03
7714277	SPEECH 2	2016-09-27 @ 3:00 pm	2016-09-30 @ 12:00 pm	0.6 ± 0.3	2016-10-03
7714279	SPEECH 2	2016-09-27 @ 3:00 pm	2016-09-30 @ 12:00 pm	< 0.3	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

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October 7, 2016

**** LABORATORY ANALYSIS REPORT ****

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

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 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 | 14. Lourie Center |
| 2. Walt Whitman High School | 15. Shriver Elementary School |
| 3. Burning Tree Elementary School | 16. Viers Mill Elementary School |
| 4. Ashburton Elementary School | 17. Highland Elementary School |
| 5. Bethesda Maintenance | 18. Newport Middle School |
| 6. Bethesda Transportation | 19. Albert Einstein High School |
| 7. Herbert Hoover Middle School | 20. Sligo Middle School |
| 8. Cold Spring Elementary School | 21. East Silver Spring Elementary School |
| 9. Garret Park Elementary School | 22. Oak View Elementary School |
| 10. Rock View Elementary School | 23. Roscoe Nix Elementary School |
| 11. Francis Scott Key Middle School | 24. Northwood High School |
| 12. Montgomery Blair High School | 25. Springbrook High School |
| 13. Stephen Knolls 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 JONES LANE ELEMENTARY SCHOOL

15110 Jones Lane, Gaithersburg, Maryland 20878

EXECUTIVE SUMMARY

Date of Test Report:	3/7/16 Follow-Up
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	5
# Rooms \geq 4.0 pCi/L:	0
Low Value:	0.8
High Value:	3.6
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) 2/24/16 (Rev 2) Initial	Result (pCi/L) 3/7/16 Follow-Up	Average Result (pCi/L)
Staff Lounge	5.6	3.6	4.6
3	2.1	3.0	2.6
12	1.9	2.2	2.1
27	2.1	1.6	1.9
GYM	1.1	0.9	1.0
GYM	1.1	0.8	1.0



MCPS RADON TESTING

Executive Summary: Jones Lane Elementary School

Date of Test Report:	3/7/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	5
# Rooms \geq 4.0 pCi/L:	0
Low Value:	0.8
High Value:	3.6

Project Status:

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



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

March 7, 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: Jones Lane Elementary School
15110 Jones Lane
Gaithersburg, MD 20878

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 Jones Lane Elementary School, located at 15110 Jones Lane in Gaithersburg, Maryland 20878 (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 eight (8) 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	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

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		
Jones Lane Elementary School		
Test Period: 02/08/16-02/11/16		
Kit Number	Room / Area	Result
7717246	3	3.0
7717249	12	2.2
7717252	27	1.6
7717242	GYM	0.9
7717243	GYM	0.8
7717253	STAFF LOUNGE	3.6

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Jones Lane Elementary School		
Test Period: 02/08/16-02/11/16		
Kit Number	QC Type	Result
7717254	D (STAFF LOUNGE)	3.5
7717244	FB (GYM)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

February 25, 2016

****LABORATORY ANALYSIS
REPORT ****

Radon test result report for:

**JONES LANE ELEMENTARY SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7730698	0	@	@		
7717249	12	2016-02-08 @ 10:00 am	2016-02-11 @ 11:00 am	2.2 ± 0.3	2016-02-15
7717252	27	2016-02-08 @ 10:00 am	2016-02-11 @ 11:00 am	1.6 ± 0.3	2016-02-15
7717246	3	2016-02-08 @ 10:00 am	2016-02-11 @ 11:00 am	3.0 ± 0.3	2016-02-15
7717242	GYM	2016-02-08 @ 10:00 am	2016-02-11 @ 11:00 am	0.9 ± 0.3	2016-02-15
7717243	GYM	2016-02-08 @ 10:00 am	2016-02-11 @ 11:00 am	0.8 ± 0.3	2016-02-15
7717244	GYM	2016-02-08 @ 10:00 am	2016-02-11 @ 11:00 am	< 0.3	2016-02-15
7717253	STAFF LOUNGE	2016-02-08 @ 10:00 am	2016-02-11 @ 12:00 pm	3.6 ± 0.4	2016-02-15
7717254	STAFF LOUNGE	2016-02-08 @ 10:00 am	2016-02-11 @ 12:00 pm	3.5 ± 0.4	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

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

3 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 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: Jones Lane Elementary School

Date of Test Report:	2/24/2016 (Rev 2)
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	53
# Rooms ≥ 4.0 pCi/L:	1
Low Value:	< 0.3
High Value:	5.6

Rooms with results ≥ 4.0 pCi/L:
Room: Staff lounge (5.6 pCi/L)

Project Status:

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



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

February 24, 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 # 12146341.19

Location: Jones Lane Elementary School
15110 Jones Lane
Gaithersburg, MD 20878

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 Jones Lane Elementary School, located at 15110 Jones Lane in Gaithersburg, Maryland 20878 (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 15, 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 December 18, 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	Staff Lounge	4.9, 5.6(D)
< 4.0 pCi/L	See Attachment B	

Notes:

D- Duplicate sample

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

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

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

Sincerely,



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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

Radon Testing Results		
Jones Lane E.S.		
Test Period: 12/15/15-12/18/15		
Kit Number	Room / Area	Result
7704749	1	0.9
7704764	2	1.0
7704752	3	2.1
7704751	4	1.3
7704750	5	2.0
7704769	6	0.9
7704763	7	1.3
7704770	8	1.1
7704756	9	1.9
7704768	10	0.6
7704765	11	1.3
7704798	12	1.9
7704800	14	0.5
7704767	15	1.4
7704780	16	2.4
7704781	17	1.6
7704782	18	1.1
7704761	19	1.1
7704784	20	2.1
7704797	21	1.2
7704783	22	0.9
7704795	23	1.0
7704774	24	0.8
7704292	25	1.8
7704773	26	1.2
7704289	27	2.1
7704315	28	1.5
7704286	29	1.5
7704708	30	2.1
7704287	31	1.9
7704285	32	0.8
7704766	A12	< 0.3
7704709	ADMIN1	0.6
7704710	AP OFFICE	0.8
7704748	BLDG SERVICES	0.6
7704794	BOOK STORAGE	1.5
7704704	CAFETERIA	1.5
7704760	CAFETERIA	1.2
7704796	COM RM	1.6
7704771	CONFERENCE	0.5
7704799	COUNSELOR OFFICE	1.0
7704747	GYM	1.1
7704757	GYM	1.1
7704746	GYM OFFICE	0.9
7704288	HEALTH	0.8
7704703	KITCHEN	1.2

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Jones Lane E.S.		
Test Period: 12/15/15-12/18/15		
Kit Number	Room / Area	Result
7704775	LIBRARY	1.1
7704777	MEDIA ROOM	1.2
7704793	OFFICE	0.5
7704772	PRINCIPLE OFFICE	0.6
7704779	SPEECH ROOM	1.2
7704762	STAFF LOUNGE	4.9
7704745	STAFF ROOM	1.8
7704792	STORAGE 5	0.9
7704291	TESTING OFFICE	0.9

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Jones Lane E.S.		
Test Period: 12/15/15-12/18/15		
Kit Number	QC Type	Result
7704787	D (A12)	< 0.3
7704317	D (COM RM)	1.3
7704758	D (GYM)	1.0
7704786	D (STAFF LOUNGE)	5.6
7704778	D (STORAGE 5)	1.0
7704290	D (TESTING OFFICE)	0.6
7704759	FB (GYM)	< 0.3
7704785	FB (STAFF LOUNGE)	< 0.3
7704776	FB (TESTING OFFICE)	< 0.3
7708211	OB (OFFICE BLANK)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

December 30, 2015

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
JONES LANE E.S.
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7704749	1	2015-12-15 @ 11:00 am	2015-12-18 @ 9:00 am	0.9 ± 0.3	2015-12-22
7704768	10	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	0.6 ± 0.3	2015-12-22
7704765	11	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.3 ± 0.3	2015-12-22
7704798	12	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.9 ± 0.3	2015-12-22
7704800	14	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	0.5 ± 0.3	2015-12-22
7704767	15	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.4 ± 0.3	2015-12-22
7704780	16	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	2.4 ± 0.3	2015-12-22
7704781	17	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	1.6 ± 0.3	2015-12-22
7704782	18	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.1 ± 0.3	2015-12-22
7704761	19	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.1 ± 0.3	2015-12-22
7704764	2	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.0 ± 0.3	2015-12-22
7704784	20	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	2.1 ± 0.3	2015-12-22
7704797	21	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	1.2 ± 0.3	2015-12-22
7704783	22	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	0.9 ± 0.3	2015-12-22
7704795	23	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	1.0 ± 0.3	2015-12-22
7704774	24	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	0.8 ± 0.3	2015-12-22
7704292	25	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	1.8 ± 0.3	2015-12-22
7704773	26	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	1.2 ± 0.3	2015-12-22
7704289	27	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	2.1 ± 0.3	2015-12-22
7704315	28	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	1.5 ± 0.3	2015-12-22
7704286	29	2015-12-15 @ 8:00 am	2015-12-18 @ 9:00 am	1.5 ± 0.3	2015-12-22
7704752	3	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	2.1 ± 0.3	2015-12-22
7704708	30	2015-12-15 @ 8:00 am	2015-12-18 @ 9:00 am	2.1 ± 0.3	2015-12-22
7704287	31	2015-12-15 @ 8:00 am	2015-12-18 @ 9:00 am	1.9 ± 0.3	2015-12-22
7704285	32	2015-12-15 @ 8:00 am	2015-12-18 @ 9:00 am	0.8 ± 0.3	2015-12-22
7704751	4	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.3 ± 0.3	2015-12-22
7704750	5	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	2.0 ± 0.3	2015-12-22
7704769	6	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	0.9 ± 0.3	2015-12-22
7704763	7	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.3 ± 0.3	2015-12-22
7704770	8	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.1 ± 0.3	2015-12-22
7704756	9	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.9 ± 0.3	2015-12-22
7704766	A12	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704787	A12	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704709	ADMIN1	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	0.6 ± 0.3	2015-12-22
7704710	AP OFFICE	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	0.8 ± 0.3	2015-12-22
7704748	BLDG SERVICES	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	0.6 ± 0.3	2015-12-22
7704794	BOOK STORAGE	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	1.5 ± 0.3	2015-12-22

December
30,
2015

**LABORATORY ANALYSIS
REPORT ****

Radon test result report for:
JONES LANE E.S.
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7704760	CAFETERIA	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.2 ± 0.3	2015-12-22
7704704	CAFETERIA	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.5 ± 0.3	2015-12-22
7704796	COM RM	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	1.6 ± 0.3	2015-12-22
7704317	COM RM	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	1.3 ± 0.3	2015-12-22
7704771	CONFERENCE	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	0.5 ± 0.3	2015-12-22
7704799	COUNSELOR OFFICE	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.0 ± 0.3	2015-12-22
7704758	GYM	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.0 ± 0.3	2015-12-22
7704759	GYM	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704757	GYM	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.1 ± 0.3	2015-12-22
7704746	GYM OFFICE	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	0.9 ± 0.3	2015-12-22
7704747	GYM	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.1 ± 0.3	2015-12-22
7704288	HEALTH	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	0.8 ± 0.3	2015-12-22
7704703	KITCHEN	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.2 ± 0.3	2015-12-22
7704775	LIBRARY	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	1.1 ± 0.3	2015-12-22
7704777	MEDIA ROOM	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	1.2 ± 0.3	2015-12-22
7704793	OFFICE	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	0.5 ± 0.3	2015-12-22
7708211	OFFICE BLANK	2015-12-15 @ 3:00 pm	2015-12-18 @ 3:00 pm	< 0.3	2015-12-22
7704772	PRINCIPLE OFFICE	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	0.6 ± 0.3	2015-12-22
7704779	SPEECH ROOM	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	1.2 ± 0.3	2015-12-22
7704762	STAFF LOUNGE	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	4.9 ± 0.4	2015-12-22
7704785	STAFF LOUNGE	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704786	STAFF LOUNGE	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	5.6 ± 0.4	2015-12-22
7704745	STAFF ROOM	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.8 ± 0.3	2015-12-22
7704778	STORAGE 5	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	1.0 ± 0.3	2015-12-22
7704792	STORAGE 5	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	0.9 ± 0.3	2015-12-22
7704776	TESTING OFFICE	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704290	TESTING OFFICE	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	0.6 ± 0.3	2015-12-22
7704291	TESTING OFFICE	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	0.9 ± 0.3	2015-12-22

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:

COX E.S.

MAIN

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

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