

## School / Facility Radon Testing Report Form

School Year: **24-25**

Facility:	Goshen Elementary School		
Address:	8701 Warfield Road		
	Gaithersburg, MD 20882		
Reason for Testing:	Scheduled Re-Testing - <input type="checkbox"/> 2-year or <input checked="" type="checkbox"/> 5-year schedule <input type="checkbox"/> Clearance Testing (Post-Mitigation) <input checked="" type="checkbox"/> Building Envelope or HVAC Upgrades <input type="checkbox"/> New Construction – Addition or Facility		
Current Radon Status:	<input type="checkbox"/> Active Mitigation (2-year regular schedule) <input checked="" type="checkbox"/> No Active Mitigation (5-year regular schedule) <input type="checkbox"/> Not Previously Tested (New Facility)		
Round of Testing:	<input type="checkbox"/> Initial Testing -or- <input checked="" 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 type="checkbox"/> Not Required <input checked="" type="checkbox"/> Consider ( $\geq 2.0$ & $< 4.0$ -pCi/L) <input type="checkbox"/> Required ( $\geq 4.0$ -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	43	Lowest Value (pCi/L)	< 0.3
Number of Rooms ( $\geq 4.0$ -pCi/L)	0	Highest Value (pCi/L)	2.0

**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  $\geq 2.0$ -pCi/L;  $\geq 2.7$ -pCi/L;  $\geq 4.0$ -pCi/L; and  $\geq 8.0$ -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:		
Person(s) Deploying or Retrieving Test Devices and certification number		Organization/Company
Tyler McCleaf, CSP – Cert. #111004-RMP		KCI Technologies, Inc.
Shannon King		KCI Technologies, Inc.
<i>If noncertified individuals, the qualified measurement professional providing oversight -</i>		
Tyler McCleaf, CSP – Cert. #111004-RMP		KCI Technologies, Inc.

**Testing**

<input checked="" type="checkbox"/> Short-Term	Length of Test (days):	3	Date of Deployment and Retrieval (mm/dd/yy):	02/25/25	03/25/25
<input type="checkbox"/> Long-Term				02/28/25	03/28/25
Does the test period include weekends, school breaks or holidays?				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<i>If “Yes” please explain/detail in the space below:</i>					
Was HVAC operating under occupied conditions?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<i>If “No” please explain/detail in the space below:</i>					

**Testing** (continued)

Round of Testing	Detectors Deployed				
	Ground-Contact		Upper-Level(s)		Total
	Initial	Follow-Up	Initial	Follow-Up	
Test Locations <sup>1</sup>	40	2	2	0	44
Duplicates <sup>2</sup>	4	1	0	0	5
Field Blanks <sup>3</sup>	2	1	0	0	3
Grand Total					52

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 <sup>1</sup>	Not applicable		10
Trip Blanks <sup>2</sup>	1	1	2
Office Blanks <sup>3, 4</sup>	1	1	2
			14

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

2 – One per shipping container from start of detector deployment

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

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

**Quality Assurance / Quality Control** (continued)

Spike Sample Lab Results. Measured values are satisfactory, i.e., within $\pm 25\%$ 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
<b>Round of Testing</b>	<b>Initial</b> <b>Follow-Up</b>
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No
For all Duplicate Samples <sup>1</sup> , the higher value is $\leq 2x$ the lower value?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
For all Duplicate Samples <sup>1</sup> , Relative Percent Difference(s) (RPD) <sup>2</sup> are less than the Warning Level <sup>3</sup> ?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
For all Duplicate Samples <sup>1</sup> , Relative Percent Difference(s) (RPD) <sup>2</sup> are less than the Control Level <sup>3</sup> ?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input 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
$\geq 4.0$ -pCi/L	28% RPD	36% RPD

## Summary of Test Results<sup>1</sup> and Determination of Valid Measurements<sup>2</sup>

Round of Testing	Ground-Contact		Upper-Level(s)		Total
	Initial	Follow-Up	Initial	Follow-Up	
Number of test locations:	40	1	2	0	43
Number of locations $\geq 8.0$ -pCi/L:	0	0	0	0	0
Number of locations $\geq 4.0$ and $\leq 8$ -pCi/L:	0	0	0	0	0
Number of locations $\geq 2.7$ and $< 4$ -pCi/L:	0	0	0	0	0
Number of locations $\geq 2.0$ and $< 2.7$ -pCi/L:	1	0	0	0	1
Number of missing required test locations <sup>3</sup> :	0	0	0	0	0
Number of failed duplicate control locations:	1	0	0	0	1
Percentage of missing test locations for the facility <sup>4,5</sup> :	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  $\geq 18$ , 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  $\geq 4.0$ -pCi/L and the total number of test locations are  $\geq 20$ , 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 Results<sup>1</sup> and Determination of Valid Measurements<sup>2</sup> (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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Were valid measurements obtained in all occupied and intended to be occupied rooms in contact with the ground, and, if applicable, 10% of upper floor rooms?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<i>If Yes to both above – then Testing Status – ‘No Further Testing Needed’ mark ‘NA’ below and complete Conclusions section</i>		
<b>If No to either above, were all results obtained under 4.0-pCi/L and were sufficient valid measurements obtained?<sup>1,2</sup></b> <b><i>If Yes, then - ‘No Further Testing Needed’ complete Conclusion section on first page.</i></b> <b><i>If No, then - ‘Follow-up Testing Required’ continue below.</i></b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input 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		
Goshen Elementary School		
Test Period: 2/25/2025 - 2/28/2025		
Kit Number	Room / Area	Result
11926972	1	0.6
11926790	2	< 0.3
11926988	2	< 0.3
11926783	3	0.5
11926979	4	< 0.3
11926980	5	< 0.3
11926789	6	< 0.3
11926781	7	< 0.3
11926784	8	< 0.3
11926987	9	< 0.3
11926791	10	< 0.3
11926965	14	< 0.3
11926703	23	< 0.3
11926992	1A	< 0.3
11926995	1A	< 0.3
11926983	A	0.7
11926999	APR	< 0.3
11927000	APR	< 0.3
11926787	ART	< 0.3
11926982	ART	< 0.3
11926955	ASSISTANT PRINCIPAL	< 0.3
11926993	BSO	< 0.3
11926996	CC	1.5
11926994	CC OFFICE	1.3
11926977	CONFERENCE	0.8
11926970	COUNSELOR	< 0.3
11926981	DP	< 0.3
11926984	GYM	< 0.3
11926997	GYM	< 0.3
11926985	GYM OFFICE	0.6
11926956	HEALTH	< 0.3
11926976	K1	< 0.3
11926969	K2	< 0.3
11926975	K2	< 0.3
11926968	K3	< 0.3
11926967	K4	0.6
11926958	LOUNGE	< 0.3



Table 1- Radon Testing Results		
Goshen Elementary School		
Test Period: 2/25/2025 - 2/28/2025		
Kit Number	Room / Area	Result
11926964	LOUNGE	< 0.3
11926971	MAIN OFFICE	< 0.3
11926990	MEDIA	1.2
11926991	MEDIA	1.4
11926989	MEDIA OFFICE	2.0
11926998	MEDIA OFFICE	0.9
11926957	MEDIA WORK ROOM	1.3
11926966	MUSIC	< 0.3
11926974	OFFICE 1	0.5
11926978	PRINCIPAL	< 0.3
11926973	WORK ROOM	< 0.3

[illegible]

Table 3 - QC Radon Testing Results			
Goshen Elementary School			
Test Period: 2/25/2025 - 2/28/2025			
Kit Number	QC Type	Room / Area	Result
11926790	FB	2	< 0.3
11926992	FB	1A	< 0.3
11926982	D	Art	< 0.3
11926969	D	K2	< 0.3
11926958	D	Lounge	< 0.3
11926989	D	Media Office	2.0
11926885	OB	OFFICE BLANK	< 0.3
11926889	TB	TRAVEL BLANK	< 0.3

Table 3a - Duplicate Worksheet / Data Validation										
Goshen 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
11926787	11926982	Art	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11926969	11926975	K2	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11926958	11926964	Lounge	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11926989	11926998	Media Office	2.0	0.9	✓	1.8	FAIL	1.5	>=1-pCi/L	✗
<b>NOTES:</b> QC Check #1 - Data Entry QC Check #2 - Higher duplicate concentration is < or = to 2x the Lower QC Check #3 - Meets RPD Limits, by average duplicate concentration - enter 2 if RPD is BELOW warning and control levels, AND passes QC Check 1 and 2 - enter 1 if RPD is ABOVE warning and BELOW control levels, AND passes QC Check 1 and 2 - enter 0 if RPD is ABOVE control level, or 'FAILS' QC Check 1 or 2							Average (pCi/L)		Warning Level	Control Level
							< 2.0		1-pCi/L	NA
							Between 2.0 and 3.9		50% RPD	67% RPD
							≥ 4.0		28% RPD	36% RPD



Table 1- Radon Testing Results		
Goshen Elementary School RT		
Test Period: 3/25/2025 - 3/28/2025		
Kit Number	Room / Area	Result
11892497	MEDIA OFFICE	< 0.3
11892498	MEDIA OFFICE	0.5
11892499	MEDIA OFFICE	0.7
11892500	MEDIA OFFICE	< 0.3

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[illegible]



Table 3 - QC Radon Testing Results			
Goshen Elementary School RT			
Test Period: 3/25/2025 - 3/28/2025			
Kit Number	QC Type	Room / Area	Result
11892499	D	MEDIA OFFICE	0.7
11892500	FB	MEDIA OFFICE	< 0.3
11951800	OB	OFFICE BLANK	< 0.3
11892493	TB	TRAVEL BLANK	< 0.3

Table 3a - Duplicate Worksheet / Data Validation										
Goshen Elementary School RT										
Test Period: 3/25/2025 - 3/28/2025										
Sample ID			Duplicate Concentrations (pCi/L) and QC Checks							
Kit Numbers		Room / Area	Higher	Lower	Check #1 (Pass/Fail)	2x the Lower	Check #2 (Pass/Fail)	Average	Relative Percent Difference (RPD)	Check #3
11892499	11892497 11892498	MEDIA OFFICE	0.6	0.3	✓	0.6	PASS	0.5	<1-pCi/L	✓
<b>NOTES:</b> 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:**GOSHEN ES  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11926972	1	2025-02-25 @ 12:00 pm	2025-02-28 @ 9:00 am	0.6 ± 0.3	2025-03-04
11926791	10	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926965	14	2025-02-25 @ 12:00 pm	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926995	1A	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926992	1A	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926790	2	2025-02-25 @ 12:00 pm	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926988	2	2025-02-25 @ 12:00 pm	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926703	23	2025-02-25 @ 12:00 pm	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926783	3	2025-02-25 @ 12:00 pm	2025-02-28 @ 9:00 am	0.5 ± 0.4	2025-03-04
11926979	4	2025-02-25 @ 12:00 pm	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926980	5	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926789	6	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926781	7	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926784	8	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926987	9	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926983	A	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	0.7 ± 0.3	2025-03-04
11926999	APR	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11927000	APR	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926787	ART	2025-02-25 @ 12:00 pm	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926982	ART	2025-02-25 @ 12:00 pm	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926955	ASSISTANT PRINCIPAL	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926993	BSO	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926996	CC	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	1.5 ± 0.4	2025-03-04
11926994	CC OFFICE	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	1.3 ± 0.4	2025-03-04
11926977	CONFERENCE	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	0.8 ± 0.4	2025-03-04
11926970	COUNSELOR	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926981	DP	2025-02-25 @ 12:00 pm	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926997	GYM	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926984	GYM	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926985	GYM OFFICE	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	0.6 ± 0.4	2025-03-04
11926956	HEALTH	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926976	K1	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926969	K2	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926975	K2	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926968	K3	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926967	K4	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	0.6 ± 0.3	2025-03-04
11926964	LOUNGE	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04

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March 4, 2025

**\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:

**GOSHEN ES  
MAIN**

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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11926958	LOUNGE	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926971	MAIN OFFICE	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926990	MEDIA	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	1.2 ± 0.4	2025-03-04
11926991	MEDIA	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	1.4 ± 0.4	2025-03-04
11926989	MEDIA OFFICE	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	2.0 ± 0.4	2025-03-04
11926998	MEDIA OFFICE	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	0.9 ± 0.4	2025-03-04
11926957	MEDIA WORK ROOM	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	1.3 ± 0.4	2025-03-04
11926966	MUSIC	2025-02-25 @ 12:00 pm	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926974	OFFICE 1	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	0.5 ± 0.3	2025-03-04
11926978	PRINCIPAL	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04
11926973	WORK ROOM	2025-02-25 @ 11:00 am	2025-02-28 @ 9:00 am	< 0.3	2025-03-04

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

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  $\mu$ 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



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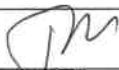



## Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Testing February 25<sup>th</sup> – February 28<sup>th</sup>, 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

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	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

April 2, 2025

**\*\* LABORATORY ANALYSIS REPORT \*\***

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11892497	MEDIA OFFICE	2025-03-25 @ 1:00 pm	2025-03-28 @ 3:00 pm	< 0.3	2025-04-02
11892498	MEDIA OFFICE	2025-03-25 @ 1:00 pm	2025-03-28 @ 3:00 pm	0.5 ± 0.4	2025-04-02
11892499	MEDIA OFFICE	2025-03-25 @ 1:00 pm	2025-03-28 @ 3:00 pm	0.7 ± 0.4	2025-04-02
11892500	MEDIA OFFICE	2025-03-25 @ 1:00 pm	2025-03-28 @ 3:00 pm	< 0.3	2025-04-02

April 3, 2025

**\*\* LABORATORY ANALYSIS REPORT \*\***

Radon test result report for:

**OFFICE  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11886664	OB	2025-03-24 @ 11:00 am	2025-03-27 @ 11:00 am	< 0.3	2025-04-02
11886692	OB	2025-03-25 @ 11:00 am	2025-03-28 @ 11:00 am	< 0.3	2025-04-02
11951800	OB	2025-03-24 @ 11:00 am	2025-03-28 @ 11:00 am	< 0.3	2025-04-02

April 3, 2025

**\*\* LABORATORY ANALYSIS REPORT \*\***

Radon test result report for:

**TRAVEL  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11886691	TB	2025-03-24 @ 11:00 am	2025-03-27 @ 11:00 am	< 0.3	2025-04-02
11886693	TB	2025-03-25 @ 11:00 am	2025-03-28 @ 11:00 am	< 0.3	2025-04-02
11892493	TB	2025-03-24 @ 11:00 am	2025-03-28 @ 11:00 am	< 0.3	2025-04-02

# 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  $\mu$ R/h Elevation = 820 ft

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March 19, 2025

**\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:

**QC**  
**MAIN**

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

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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 March 25<sup>th</sup> – March 28<sup>th</sup>, 2025

Name of Schools:

- |                    |                               |
|--------------------|-------------------------------|
| 1. Wheaton HS      | 7. Goshen ES                  |
| 2. Clarksburg HS   | 8. Great Seneca Creek ES      |
| 3. Darnestown ES   | 9. Lake Seneca ES             |
| 4. Diamond ES      | 10. Lathrop E. Smith Center   |
| 5. Gaithersburg ES | 11. Martin Luther King Jr. MS |
| 6. Germantown ES   |                               |

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	Date	Initials
Radon Test Kits Deployed	3/25/2025	BMM
Radon Test Kits Collected	3/28/2025	BMM
Radon Test Kits Shipped to Lab*	3/28/2025	BMM
Radon Test Kits Received by Lab*	4/01/2025	BMM

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

### MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Goshen Elementary School
Date of Test Report	3/2/2023
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	48
# Rooms Re-tested	2
# Rooms $\geq 4.0$ pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.6 pCi/L

Project Status:

1. Initial testing completed;
2. Missing or compromised samples need re-test.
3. Re-testing Completed 2/14/23 – 2/17/23.
4. 5-Year Testing Completed.



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March 3, 2023

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

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

Location: Goshen Elementary School  
8701 Warfield Road  
Gaithersburg, MD 20882

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 Goshen Elementary School, located at 8701 Warfield Road, Gaithersburg, MD 20882 (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](http://www.epa.gov/radon).

KCI visited the site initially on January 23, 2023 and deployed fifty-five (55) 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 returned to the site on January 26, 2023 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Accustar Labs - MA. for analysis by gamma-ray spectroscopy. Accustar Labs - MA is a NRSB certified analytical laboratory for radon analysis (certification #ARL0017) located at 2 Saber Way, Ward Hill, MA 01835.

KCI re-visited the site on February 14, 2023 to deploy five (5) activated charcoal (AC) radon test kits for testing of missed rooms or compromised test kits during initial testing.

KCI returned to the site on February 17, 2023 to retrieve the radon re-sampling test kits. KCI shipped all radon tests via overnight delivery to Accustar Labs – MA for analysis by gamma-ray spectroscopy. Accustar Labs – MA is a NRSB certified analytical laboratory for radon analysis (certification #ARL0017) located at 2 Saber Way, Ward Hill, MA 01835.

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.

### **Evaluation of Testing Conditions:**

These tests represent:

- Follow up to initial testing.

These tests were conducted to:

- Evaluate radon concentration levels at the facility.

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate temperatures ranged from the 31°F to 52°F. Maximum sustained winds ranged from 5-25 miles per hour. Average humidity was around 60% with .32 inches of precipitation (rain) was recorded during testing period.

During the re-testing period, weather records indicate low temperatures were in the mid-20s°F and high temperatures ranged to the 70s°F. Maximum sustained winds ranged from 0-33 miles per hour. Average humidity was around 62% with 1.01 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:

<b>Radon Concentration</b>	<b>Room</b>	<b>Result</b>
<b>≥4.0 pCi/L</b>	None	N/A
<b>&lt;4.0 pCi/L</b>	See Attachment B	

The results of the radon re-testing analysis indicated the following:

<b>Radon Concentration</b>	<b>Room</b>	<b>Result</b>
<b>≥4.0 pCi/L</b>	None	N/A
<b>&lt;4.0 pCi/L</b>	See Attachment B	

<b>Quality Control Samples</b>	
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		
Goshen ES		
Test Period: 01/09/2023 - 01/12/2023		
Kit Number	Room / Area	Result
11285512	1	< 0.3
11285511	2	< 0.3
11285505	3	0.5
11285506	4	0.9
11285517	5	< 0.3
11285518	5	< 0.3
11285508	6	0.7
11287068	7	0.8
11287087	8	0.9
11287088	9	0.8
11287093	10	< 0.3
11287076	16	0.8
11287085	1B	1.1
11287009	A	0.8
11285510	ART	< 0.3
11285536	ASSISTANT PRINCIPAL	1.2
11287094	BAR T	1.0
11287089	BUILDING SERVICE MGR	0.9
11285996	COMP	1.2
11285526	CONFERENCE	0.9
11285542	CONFERENCE	0.8
11285535	CONFERENCE ROOM	1.6
11285502	DUAL PURPOSE	< 0.3
11287100	ESOL	0.7
11285988	GYM	0.8
11287002	GYM	N/A
11285995	GYM OFFICE	0.7
11285539	HEALTH	0.5
11285513	IMC	0.7
11285514	IMC	1.2
11285516	K1	< 0.3
11287084	K2	0.6
11285979	K3	0.8
11287092	K4	1.0
11287098	KITCHEN OFFICE	0.8
11285541	MAIN OFFICE	0.9
11285509	MATERIAL PREP	1.2
11285503	MEDIA CTR STORAGE	1.0
11287095	MULTIPURPOSE	1.0
11287096	MULTIPURPOSE	1.0
11287097	MULTIPURPOSE ROOM	0.8
11285504	MUSIC	0.6

Table 1- Radon Testing Results		
Goshen ES		
Test Period: 01/09/2023 - 01/12/2023		
Kit Number	Room / Area	Result
11285525	PRINCIPAL	0.7
11285540	PRINCIPAL	0.9
11287091	R	1.1
11285515	SEIU ROOM	1.3
11287075	SP	N/A
11287059	SPE	0.7
11287083	SPE	< 0.3
11287099	SPE	1.1
11285507	STAFF LOUNGE	< 0.3
11287060	STAFF LOUNGE	0.6
11287067	STAFF LOUNGE	0.8
11287001	STAFF WORK ROOM	0.9
11287090	STAGE	< 0.3

Table 2- Radon Testing Results			
Goshen ES			
Test Period: 01/09/23 - 01/12/23			
Kit Number	QC Type	Room / Area	Result
11285518	D	5	< 0.3
11287096	D	Multipurpose	1.0
11285525	D	Principal	0.7
11287059	D	SPE	0.7
11287083	FB	SPE	< 0.3
11287060	D	Staff lounge	0.6
11285507	FB	Staff lounge	< 0.3
11285160	OB	OFFICE BLANK	< 0.3
11285167	TB	TRAVEL BLANK	< 0.3



Table 1- Radon Testing Results		
Goshen ES RT		
Test Period: 02/14/2023 - 02/17/2023		
Kit Number	Room / Area	Result
11288294	GYM	0.5
11288295	GYM	< 0.3
11288289	SPEECH	< 0.3
11288298	SPEECH	< 0.3
11288300	SPEECH	< 0.3

Table 2- Radon Testing Results			
Goshen ES RT			
Test Period: 02/14/23 - 02/17/23			
Kit Number	QC Type	Room / Area	Result
11288300	D	Speech	< 0.3
11288298	FB	Speech	< 0.3
11634060	OB	OFFICE BLANK	< 0.3
11634067	TB	TRAVEL BALNK	< 0.3



## ATTACHMENT C

### Laboratory Analytical Results



Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11285512	1	2023-01-09 @ 1:00 pm	2023-01-12 @ 12:00 pm	< 0.3	2023-01-16
11287093	10	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	< 0.3	2023-01-16
11287076	16	2023-01-09 @ 2:00 pm	2023-01-12 @ 1:00 pm	0.8 ± 0.4	2023-01-16
11287085	1B	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	1.1 ± 0.4	2023-01-16
11285511	2	2023-01-09 @ 1:00 pm	2023-01-12 @ 12:00 pm	< 0.3	2023-01-16
11285505	3	2023-01-09 @ 1:00 pm	2023-01-12 @ 12:00 pm	0.5 ± 0.4	2023-01-16
11285506	4	2023-01-09 @ 1:00 pm	2023-01-12 @ 1:00 pm	0.9 ± 0.4	2023-01-16
11285518	5	2023-01-09 @ 1:00 pm	2023-01-12 @ 12:00 pm	< 0.3	2023-01-16
11285517	5	2023-01-09 @ 1:00 pm	2023-01-12 @ 12:00 pm	< 0.3	2023-01-16
11285508	6	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	0.7 ± 0.4	2023-01-16
11287068	7	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	0.8 ± 0.4	2023-01-16
11287087	8	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	0.9 ± 0.4	2023-01-16
11287088	9	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	0.8 ± 0.3	2023-01-16
11287009	A	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	0.8 ± 0.4	2023-01-16
11285510	ART	2023-01-09 @ 1:00 pm	2023-01-12 @ 12:00 pm	< 0.3	2023-01-16
11285536	ASSISTANT PRINCIPAL	2023-01-09 @ 3:00 pm	2023-01-12 @ 12:00 pm	1.2 ± 0.4	2023-01-16
11287094	BAR T	2023-01-09 @ 2:00 pm	2023-01-12 @ 1:00 pm	1.0 ± 0.4	2023-01-16
11287089	BUILDING SERVICE MGR	2023-01-09 @ 2:00 pm	2023-01-12 @ 1:00 pm	0.9 ± 0.3	2023-01-16
11285996	COMP	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	1.2 ± 0.4	2023-01-16
11285542	CONFERENCE	2023-01-09 @ 3:00 pm	2023-01-12 @ 12:00 pm	0.8 ± 0.4	2023-01-16
11285526	CONFERENCE	2023-01-09 @ 3:00 pm	2023-01-12 @ 12:00 pm	0.9 ± 0.4	2023-01-16
11285535	CONFERENCE ROOM	2023-01-09 @ 3:00 pm	2023-01-12 @ 12:00 pm	1.6 ± 0.4	2023-01-16
11285502	DUAL PURPOSE	2023-01-09 @ 1:00 pm	2023-01-12 @ 12:00 pm	< 0.3	2023-01-16
11287100	ESOL	2023-01-09 @ 3:00 pm	2023-01-12 @ 1:00 pm	0.7 ± 0.4	2023-01-16
11285988	GYM	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	0.8 ± 0.3	2023-01-16
11285995	GYM OFFICE	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	0.7 ± 0.4	2023-01-16
11285539	HEALTH	2023-01-09 @ 3:00 pm	2023-01-12 @ 12:00 pm	0.5 ± 0.4	2023-01-16
11285514	IMC	2023-01-09 @ 1:00 pm	2023-01-12 @ 12:00 pm	1.2 ± 0.4	2023-01-16
11285513	IMC	2023-01-09 @ 1:00 pm	2023-01-12 @ 12:00 pm	0.7 ± 0.4	2023-01-16
11285516	K1	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	< 0.3	2023-01-16
11287084	K2	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	0.6 ± 0.4	2023-01-16
11285979	K3	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	0.8 ± 0.4	2023-01-16
11287092	K4	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	1.0 ± 0.4	2023-01-16
11287098	KITCHEN OFFICE	2023-01-09 @ 2:00 pm	2023-01-12 @ 1:00 pm	0.8 ± 0.4	2023-01-16
11285541	MAIN OFFICE	2023-01-09 @ 3:00 pm	2023-01-12 @ 12:00 pm	0.9 ± 0.4	2023-01-16
11285509	MATERIAL PREP	2023-01-09 @ 1:00 pm	2023-01-12 @ 12:00 pm	1.2 ± 0.4	2023-01-16
11285503	MEDIA CTR STORAGE	2023-01-09 @ 1:00 pm	2023-01-12 @ 12:00 pm	1.0 ± 0.4	2023-01-16

January 16, 2023

**\*\* LABORATORY ANALYSIS REPORT \*\***

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11287096	MULTIPURPOSE	2023-01-09 @ 2:00 pm	2023-01-12 @ 1:00 pm	1.0 ± 0.4	2023-01-16
11287095	MULTIPURPOSE	2023-01-09 @ 2:00 pm	2023-01-12 @ 1:00 pm	1.0 ± 0.4	2023-01-16
11287097	MULTIPURPOSE ROOM	2023-01-09 @ 2:00 pm	2023-01-12 @ 1:00 pm	0.8 ± 0.4	2023-01-16
11285504	MUSIC	2023-01-09 @ 1:00 pm	2023-01-12 @ 12:00 pm	0.6 ± 0.4	2023-01-16
11285525	PRINCIPAL	2023-01-09 @ 3:00 pm	2023-01-12 @ 12:00 pm	0.7 ± 0.4	2023-01-16
11285540	PRINCIPAL	2023-01-09 @ 3:00 pm	2023-01-12 @ 12:00 pm	0.9 ± 0.4	2023-01-16
11287091	R	2023-01-09 @ 3:00 pm	2023-01-12 @ 1:00 pm	1.1 ± 0.4	2023-01-16
11285515	SEIU ROOM	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	1.3 ± 0.4	2023-01-16
11287099	SPE	2023-01-09 @ 2:00 pm	2023-01-12 @ 1:00 pm	1.1 ± 0.4	2023-01-16
11287083	SPE	2023-01-09 @ 2:00 pm	2023-01-12 @ 1:00 pm	< 0.3	2023-01-16
11287059	SPE	2023-01-09 @ 2:00 pm	2023-01-12 @ 1:00 pm	0.7 ± 0.4	2023-01-16
11287067	STAFF LOUNGE	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	0.8 ± 0.4	2023-01-16
11285507	STAFF LOUNGE	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	< 0.3	2023-01-16
11287060	STAFF LOUNGE	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	0.6 ± 0.3	2023-01-16
11287001	STAFF WORK ROOM	2023-01-09 @ 3:00 pm	2023-01-12 @ 12:00 pm	0.9 ± 0.4	2023-01-16
11287090	STAGE	2023-01-09 @ 2:00 pm	2023-01-12 @ 12:00 pm	< 0.3	2023-01-16

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

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February 20, 2023

**\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:

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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11288294	GYM	2023-02-14 @ 10:00 am	2023-02-17 @ 10:00 am	0.5 ± 0.3	2023-02-20
11288295	GYM	2023-02-14 @ 10:00 am	2023-02-17 @ 10:00 am	< 0.3	2023-02-20
11288289	SPEECH	2023-02-14 @ 10:00 am	2023-02-17 @ 10:00 am	< 0.3	2023-02-20
11288298	SPEECH	2023-02-14 @ 10:00 am	2023-02-17 @ 10:00 am	< 0.3	2023-02-20
11288300	SPEECH	2023-02-14 @ 10:00 am	2023-02-17 @ 10:00 am	< 0.3	2023-02-20

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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 208802

NOMINAL Conditions: Radon Conc 24.4 pCi/L Rel. Hum 48.6 % Temp. 79.3 F

Date Start: 1/27/23 Date Stop: 1/30/23 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0816 Time Stop: 0816 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

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

11633682, 11633687, 11633688 \_\_\_\_\_

11633695, 11633696 \_\_\_\_\_

P3 Cell

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  $\mu$ R/h Elevation = 820 ft

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February 3, 2023

**\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:

**OFFICE**

**MAIN**

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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11633696	SK10	2023-01-27 @ 8:00 am	2023-01-30 @ 8:00 am	24.2 ± 1.9	2023-02-03
11633682	SK6	2023-01-27 @ 8:00 am	2023-01-30 @ 8:00 am	26.9 ± 2.1	2023-02-03
11633687	SK7	2023-01-27 @ 8:00 am	2023-01-30 @ 8:00 am	23.8 ± 1.9	2023-02-03
11633688	SK8	2023-01-27 @ 8:00 am	2023-01-30 @ 8:00 am	25.9 ± 2.1	2023-02-03
11633695	SK9	2023-01-27 @ 8:00 am	2023-01-30 @ 8:00 am	27.0 ± 2.2	2023-02-03

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



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ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS  
Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

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## Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Week 2 Retesting January Schools

Name of Schools:

1. A. Mario Loiederman MS
2. Cannon Road ES
3. Forest Knolls ES
4. Glen Haven ES
5. Goshen ES
6. Highland View ES
7. John F. Kennedy HS
8. Lakelands Park MS
9. Montgomery Village MS
10. Poolesville HS
11. Springbrook HS

---

	Date	Initials
Radon Test Kits Deployed	02/14/2023	BMU
Radon Test Kits Collected	02/17/2023	BMU
Radon Test Kits Shipped to Lab*	02/17/2023	BMU
Radon Test Kits Received by Lab*	02/20/2023	BMU

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



## MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

**Executive Summary:**  
**Goshen Elementary School**  
8701 Warfield Road  
Gaithersburg, MD 20882

Date of Test Report:	3/15/2019
Round of Testing:	Initial <b>Follow-up</b> Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested:	1
# of Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	<0.4
High Value:	<0.4

### Project Status

**Retesting completed:** No further action at this time.



March 15, 2019

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

Re: Radon Testing Services

Location: Goshen Elementary School  
8701 Warfield Road  
Gaithersburg, MD 20882

Dear Mr. Cox:

Intertek-PSI (PSI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) for completion of a “short-term” 3-day radon test for Goshen Elementary School, located at 8701 Warfield Road, Gaithersburg, MD 20882 (subject site).

#### **Scope of Services:**

PSI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. PSI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings. A National Radon Safety Board (NRSB) Radon Measurement Specialist (certification #14SS007) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from [www.montgomerycountymd.gov/dep/air/radon](http://www.montgomerycountymd.gov/dep/air/radon) or [www.epa.gov/radon](http://www.epa.gov/radon).

PSI visited the site on February 25, 2019 and deployed one (1) activated charcoal (AC) radon test kit. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on February 28, 2019 to retrieve the radon sampling test kit. A floor plan map of the building with the test location is included as Attachment A of this report.

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

#### **Evaluation of Testing Conditions:**

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

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





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

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

### **Results:**

The results of the radon test analysis indicated the following:

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

Notes:

D -Duplicate Sample

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

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

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

Respectfully Submitted,

**INTERTEK - PSI**

A handwritten signature in black ink, appearing to read "Nand Kaushik". The signature is fluid and cursive, with the first name "Nand" and last name "Kaushik" clearly distinguishable.

Nand Kaushik, P.E.

Department Manager, Environmental Services

[Nand.Kaushik@intertek.com](mailto:Nand.Kaushik@intertek.com)

Attachments:

A – Floor Plan with Test Locations

B – Table 1 – Radon Test Summary Spreadsheet

C – Laboratory Analytical Results

## **ATTACHMENT B**

Radon Test Summary Spreadsheet

Radon Testing Results		
Goshen Elementary School		
Testing period: 2/25/19 - 2/28/19		
Kit Number	Room / Area	Result (pCi/L)
3923446	Health Room	<0.4

**Table Notes:**

D – Duplicate

FB – Field Blank

OB – Office Blank

TB – Transit Blank

QC – Quality Control

# **ATTACHMENT C**

Laboratory Analytical Results

NRPP 105011 AL  
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Goshen ES  
8701 Warfield Road  
Gaithersburg MD 20882

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
3220715	3923446	02/25/2019 10:05 am	02/28/2019 9:35 am	Floor Main Room Health	< 0.4

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

Distributed by: Intertek-PSI (VA)

Date Received: 03/04/2019    Date Logged: 03/04/2019    Date Analyzed: 03/05/2019    Date Reported: 03/05/2019

Report Reviewed By: 

Report Approved By: 

**Disclaimer:**

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

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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



## MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

### Executive Summary: Goshen Elementary School

8701 Warfield Road  
Gaithersburg, MD 20882

Date of Test Report:	12/28/2018
Round of Testing:	Initial Follow-up Post Remediation 2 Year Testing <b>5 Year Testing</b> HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested:	43
# of Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	< 0.4
High Value:	1.0

### Project Status

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





December 28, 2018

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

Re: Radon Testing Services

Location: Goshen Elementary School  
8701 Warfield Road  
Gaithersburg, MD 20882

Dear Mr. Cox:

Intertek-PSI (PSI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) for completion of a "short-term" 3-day radon test for Goshen Elementary School, located at 8701 Warfield Road, Gaithersburg, MD 20882 (subject site).

**Scope of Services:**

PSI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. PSI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings. A National Radon Safety Board (NRSB) Radon Measurement Specialist (certification #14SS007) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from [www.montgomerycountymd.gov/dep/air/radon](http://www.montgomerycountymd.gov/dep/air/radon) or [www.epa.gov/radon](http://www.epa.gov/radon).

PSI visited the site on December 3, 2018 and deployed fifty-seven (57) activated charcoal (AC) radon test kits. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on December 6, 2018 to retrieve the radon sampling test kits. A floor plan map of the building with the test locations is included as Attachment A of this report.

As a quality control measure, PSI included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, PSI submitted ten (10) test kits to Bowser-Morner Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner Inc. prior to being returned to the laboratory for analysis.

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



### **Evaluation of Testing Conditions:**

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

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

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

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

### **Results:**

The results of the radon test analysis indicated the following:

<b>Radon Concentration</b>	<b>Room</b>	<b>Result</b>
$\geq 4.0$ pCi/L	None	NA
$\leq 4.0$ pCi/L	See Attachment B	

Notes:

D -Duplicate Sample

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

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

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



Respectfully Submitted,

**INTERTEK-PSI**

Nand Kaushik, P.E.  
Department Manager, Environmental Services  
[Nand.Kaushik@intertek.com](mailto:Nand.Kaushik@intertek.com)

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

## **ATTACHMENT B**

Radon Test Summary Spreadsheet

Radon Testing Results		
Goshen Elementary School		
Testing period: 12/03/18 - 12/06/18		
Kit Number	Room / Area	Result (pCi/L)
3926940	APR	0.5
3927002	APR	0.4
3926921	APR Stage	0.4
3927001	APR Storage	< 0.4
3926981	Art	< 0.4
3927032	Assistant Principal	0.4
3926938	Building Service	< 0.4
3926936	Communication Center	0.7
3927010	Conference	0.6
3927033	Conference	0.6
3926937	Control Room	0.7
3926982	CR1	< 0.4
3926933	CR10	< 0.4
3927003	CR13	0.4
3926983	CR2	0.5
3926992	CR22	0.5
3926994	CR25	< 0.4
3926984	CR3	0.4
3926985	CR4	< 0.4
3926986	CR5	0.4
3926847	CR6	< 0.4
3926849	CR7	0.4
3926850	CR8	0.5
3926931	CR9	< 0.4
3927036	DPR	< 0.4
3926989	ESOL	0.8
3926987	Gym	0.7
3926988	Gym	0.5
3927004	Gym Office	0.6
3927008	Health (MISSING)	--
3927009	Health Office	0.6
3927039	IMC	0.9
3927040	IMC	0.7
3926856	K1	< 0.4
3926854	K2	< 0.4
3926853	K3	0.6
3926851	K4	0.6
3926939	Kitchen	0.4
3927034	Mail	0.7
3927006	Main Office	0.7
3927037	Material Prep	0.7
3927035	Music	< 0.4
3927031	Principal	< 0.4

Radon Testing Results		
Goshen Elementary School		
Testing period: 12/03/18 - 12/06/18		
Kit Number	Room / Area	Result (pCi/L)
3926935	Reading Room 1A	1.0
3926934	Reading Room 1B	0.9
3926990	Staff Lounge	< 0.4
3927007	Workroom	0.7

Radon Testing Results		
Goshen Elementary School		
Testing period: 12/03/18 - 12/06/18		
Kit Number	QC Type	Result (pCi/L)
3926932	APR Storage (D)	0.4
3926848	CR6 (D)	< 0.4
3926993	CR22 (D)	< 0.4
3927005	Gym Office (D)	0.6
3926855	K2 (D)	< 0.4
3926852	K4 (D)	0.5
3927038	Material Prep (D)	0.7
3926869	Field Blank	< 0.4
3926870	Field Blank	< 0.4
3926867	Office Blank	< 0.4
3926868	Transit Blank	< 0.4

**Table Notes:**

D – Duplicate

FB – Field Blank

OB – Office Blank

TB – Transit Blank

QC – Quality Control



# **ATTACHMENT C**

Laboratory Analytical Results

NRPP 105011 AL  
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Goshen ES  
Not Indicated  
Gaithersburg MD 20882

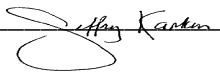
Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
3201828	3926851	12/03/2018	5:18 pm	12/06/2018	3:30 pm	First Floor Room K4	0.6
3201829	3926852	12/03/2018	5:18 pm	12/06/2018	3:30 pm	First Floor Room K4 Duplicate	0.5
3201830	3926853	12/03/2018	5:20 pm	12/06/2018	3:32 pm	First Floor Room K3	0.6
3201831	3926854	12/03/2018	5:22 pm	12/06/2018	3:33 pm	First Floor Room K2	< 0.4
3201832	3926855	12/03/2018	5:22 pm	12/06/2018	3:33 pm	First Floor Room K2 Duplicate	< 0.4
3201833	3926856	12/03/2018	5:26 pm	12/06/2018	3:35 pm	First Floor Room K1	< 0.4
3201834	3927004	12/03/2018	5:28 pm	12/06/2018	3:36 pm	First Floor Room Gym Office	0.6
3201835	3927005	12/03/2018	5:28 pm	12/06/2018	3:36 pm	First Floor Room Gym Office Duplicate	0.6
3201836	3927006	12/03/2018	5:32 pm	12/06/2018	3:38 pm	First Floor Room Main Office	0.7
3201837	3927007	12/03/2018	5:34 pm	12/06/2018	3:39 pm	First Floor Workroom	0.7
3201838	3927009	12/03/2018	5:38 pm	12/06/2018	3:41 pm	First Floor Room Health	0.6

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

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

Report Reviewed By: 

Report Approved By: 

**Disclaimer:**

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

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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

NRPP 105011 AL  
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Goshen ES  
Not Indicated  
Gaithersburg MD 20882

Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
3201839	3927010	12/03/2018	5:40 pm	12/06/2018	3:42 pm	First Floor Room Conference	0.6
3201840	3927031	12/03/2018	5:42 pm	12/06/2018	3:43 pm	First Floor Room Principal	< 0.4
3201841	3927032	12/03/2018	5:44 pm	12/06/2018	3:44 pm	First Floor Room Assistant Principal	0.4
3201842	3927033	12/03/2018	5:46 pm	12/06/2018	3:45 pm	First Floor Room Conference	0.6
3201843	3927034	12/03/2018	5:48 pm	12/06/2018	3:46 pm	Building Mail First Floor	0.7
3201844	3927035	12/03/2018	5:50 pm	12/06/2018	3:47 pm	First Floor Room Music	< 0.4
3201845	3927036	12/03/2018	5:52 pm	12/06/2018	3:48 pm	First Floor Room DPR	< 0.4
3201846	3927037	12/03/2018	5:54 pm	12/06/2018	3:49 pm	First Floor Room Material Prep	0.7
3201847	3927038	12/03/2018	5:54 pm	12/06/2018	3:49 pm	First Floor Room Material Prep Duplicate	0.7
3201848	3927039	12/03/2018	5:58 pm	12/06/2018	3:51 pm	First Floor Room IMC	0.9
3201849	3927040	12/03/2018	6:00 pm	12/06/2018	3:52 pm	First Floor Room IMC	0.7

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

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

Report Reviewed By: 

Report Approved By: 

**Disclaimer:**

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Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NRPP 105011 AL  
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Goshen ES  
Not Indicated  
Gaithersburg MD 20882

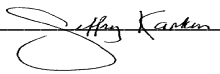
Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
3201850	3926981	12/03/2018	5:02 pm	12/06/2018	3:53 pm	First Floor Room Art	< 0.4
3201851	3926982	12/03/2018	6:04 pm	12/06/2018	3:54 pm	First Floor Room CR1	< 0.4
3201852	3926983	12/03/2018	5:06 pm	12/06/2018	3:55 pm	First Floor Room CR2	0.5
3201853	3926984	12/03/2018	5:08 pm	12/06/2018	3:56 pm	First Floor Room CR3	0.4
3201854	3926985	12/03/2018	6:10 pm	12/06/2018	3:57 pm	First Floor Room CR4	< 0.4
3201855	3926986	12/03/2018	6:12 pm	12/06/2018	3:58 pm	First Floor Room CR5	0.4
3201856	3926987	12/03/2018	6:14 pm	12/06/2018	3:59 pm	First Floor Room Gym	0.7
3201857	3926988	12/03/2018	6:16 pm	12/06/2018	4:00 pm	First Floor Room Gym	0.5
3201858	3926989	12/03/2018	6:18 pm	12/06/2018	4:01 pm	First Floor Room ESOL	0.8
3201859	3926990	12/03/2018	6:20 pm	12/06/2018	4:02 pm	First Floor Room Staff Lounge	< 0.4
3201860	3926847	12/03/2018	6:22 pm	12/06/2018	4:03 pm	First Floor Room CR6	< 0.4

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

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

Report Reviewed By: 

Report Approved By: 

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Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NRPP 105011 AL  
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Goshen ES  
Not Indicated  
Gaithersburg MD 20882

Log Number	Device Number	Test Exposure Duration:		Area Tested		Result pCi/L
3201861	3926848	12/03/2018 6:22 pm	12/06/2018 4:03 pm	First Floor Room CR6 Duplicate		< 0.4
3201862	3926849	12/03/2018 6:26 pm	12/06/2018 4:05 pm	First Floor Room CR7		0.4
3201863	3926850	12/03/2018 6:28 pm	12/06/2018 4:06 pm	First Floor Room CR8		0.5
3201864	3926931	12/03/2018 6:30 pm	12/06/2018 4:07 pm	First Floor Room CR9		< 0.4
3201865	3926933	12/03/2018 6:32 pm	12/06/2018 4:08 pm	First Floor Room CR10		< 0.4
3201866	3926934	12/03/2018 6:34 pm	12/06/2018 4:09 pm	Floor r Room Reading 1B		0.9
3201867	3926935	12/03/2018 6:36 pm	12/06/2018 4:10 pm	First Floor Room Reading 1A		1.0
3201868	3926936	12/03/2018 6:38 pm	12/06/2018 4:11 pm	First Floor Room Communication Center		0.7
3201869	3926937	12/03/2018 6:40 pm	12/06/2018 4:12 pm	First Floor Room Control		0.7
3201870	3926938	12/03/2018 6:42 pm	12/06/2018 4:13 pm	First Floor Room Building Service		< 0.4
3201871	3926939	12/03/2018 6:44 pm	12/06/2018 4:14 pm	First Floor Room Kitchen		0.4

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

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

Report Reviewed By: 

Report Approved By: 

**Disclaimer:**

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NRPP 105011 AL  
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Goshen ES  
Not Indicated  
Gaithersburg MD 20882

Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
3201872	3926940	12/03/2018	6:46 pm	12/06/2018	4:15 pm	First Floor Room APR	0.5
3201873	3927002	12/03/2018	6:48 pm	12/06/2018	4:16 pm	First Floor Room APR	0.4
3201874	3926921	12/03/2018	6:50 pm	12/06/2018	4:17 pm	First Floor Room APR Stage	0.4
3201875	3927001	12/03/2018	6:52 pm	12/06/2018	4:18 pm	First Floor Room APR Storage	< 0.4
3201876	3926932	12/03/2018	6:52 pm	12/06/2018	4:18 pm	First Floor Room APR Storage Duplicate	0.4
3201877	3927003	12/03/2018	6:56 pm	12/06/2018	4:20 pm	Floor Second Room CR13	0.4
3201878	3926992	12/03/2018	7:00 pm	12/06/2018	4:21 pm	Floor Second Room CR22	0.5
3201879	3926993	12/03/2018	7:00 pm	12/06/2018	4:21 pm	Floor Second Room CR22 Duplicate	< 0.4
3201880	3926994	12/03/2018	7:02 pm	12/06/2018	4:23 pm	Floor Second Room CR25	< 0.4
3201881	3926867	12/03/2018	6:00 am	12/06/2018	6:00 pm	Office Blank	< 0.4
3201882	3926868	12/03/2018	6:00 am	12/06/2018	6:00 pm	Transit Blank	< 0.4

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

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

Report Reviewed By: 

Report Approved By: 

**Disclaimer:**

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NRPP 105011 AL  
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Goshen ES  
Not Indicated  
Gaithersburg MD 20882

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
3201883	3926869	12/03/2018 7:00 am 12/06/2018 4:23 pm	Field Blank	< 0.4
3201884	3926870	12/03/2018 7:00 am 12/06/2018 4:23 pm	Field Blank	< 0.4

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

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

Report Reviewed By: 

Report Approved By: 

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NRPP 105011 AL  
NRSB ARL0007  
Ohio RL41

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

Laboratory Report for:

Property Tested:

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

MCPS Radon Survey  
4514 Taylorsville Road  
Dayton OH 45424

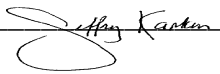
Log Number	Device Number	Test Exposure Duration:		Area Tested		Result pCi/L
3204125	3926831	12/07/2018 9:47 am	12/10/2018 9:47 am	Spike		36.1
3204126	3926832	12/07/2018 9:47 am	12/10/2018 9:47 am	Spike		34.8
3204127	3926833	12/07/2018 9:47 am	12/10/2018 9:47 am	Spike		33.7
3204128	3926834	12/07/2018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

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

Test Performed By: Unknown

Distributed by: Intertek-PSI (VA)

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

Report Reviewed By: 

Report Approved By: 

**Disclaimer:**

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# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT Intertek - PSI

Job Number 187732

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

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

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0947 Time Stop: 0947

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

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

Device No.'s: \_\_\_\_\_

3926831 thru 3926840

G2 Left

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: \_\_\_\_\_

Device No.'s: \_\_\_\_\_

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: \_\_\_\_\_

Device No.'s: \_\_\_\_\_

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



## Chain of Custody

Project Name: MCPS Radon Survey 2018

Name of Schools:

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

---

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

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



## MCPS RADON TESTING

### Executive Summary: Goshen Elementary School

Date of Test Report:	3/11/2016 (Rev 1)
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	49
# Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	1.0

### Project Status:

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



March 11, 2016 (Rev 1)

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

Re: **Radon Testing Services**  
KCI Job # 12146341.22

Location: Goshen Elementary School  
8701 Warfield Road  
Gaithersburg, MD 20882

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 Goshen Elementary School, located at 8701 Warfield Road in Gaithersburg, Maryland 20882 (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](http://www.montgomerycountymd.gov/dep/air/radon) or [www.epa.gov/radon](http://www.epa.gov/radon).

KCI visited the site on December 28, 2015 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 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 31, 2015 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936

Butler Bridge Road, Mills River, North Carolina.

### **Evaluation of Testing Conditions:**

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

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:

<b>Radon Concentration</b>	<b>Room</b>	<b>Result</b>
<b><math>\geq 4.0</math> pCi/L</b>	none	n/a
<b><math>&lt; 4.0</math> pCi/L</b>	See Attachment B	

Notes:

D- Duplicate sample

The 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		
Goshen ES		
Test Period: 12/28/15-12/31/15		
Kit Number	Room / Area	Result
7711424	1	< 0.3
7711443	2	< 0.3
7711442	3	< 0.3
7711405	4	0.6
7711403	5	< 0.3
7711407	6	< 0.3
7711416	7	< 0.3
7711413	8	< 0.3
7711412	9	< 0.3
7711421	10	< 0.3
7708125	13	< 0.3
7708129	21	< 0.3
7708126	22	< 0.3
7708101	140	< 0.3
7708106	142	< 0.3
7708131	143	< 0.3
7711434	144	< 0.3
7708105	145	< 0.3
7711420	146	< 0.3
7708107	147	< 0.3
7711426	ART	< 0.3
7708123	BLDG MANAGER	< 0.3
7711439	COMPUTER ROOM 1	1.0
7711415	COMPUTER ROOM 2	< 0.3
7711433	CTRL ROOM	< 0.3
7711417	DP	< 0.3
7711419	ESOL	< 0.3
7711408	GYM	< 0.3
7711409	GYM	< 0.3
7711411	GYM	< 0.3
7711414	* GYM (missing)	-
7711430	HEALTH	< 0.3
7711425	HEALTH A	< 0.3
7711437	IA/IB	0.6
7708108	K1	< 0.3
7711432	K2	< 0.3
7708104	K3	0.8
7708127	K4	< 0.3
7711422	LIBRARY	< 0.3
7708158	MATERIAL ROOM	< 0.3
7711429	MEDIA	0.8
7711440	ML1015	< 0.3
7711444	ML973	< 0.3
7711438	ML974	< 0.3
7711402	ML977	< 0.3
7708111	MO147	< 0.3

Table Note:

\* Missing or Compromised Sample

Radon Testing Results		
Goshen ES		
Test Period: 12/28/15-12/31/15		
Kit Number	Room / Area	Result
7708120	MPR	< 0.3
7708124	MPR	< 0.3
7708130	MPR STORAGE	< 0.3
7711428	MUSIC	< 0.3
7711441	OFFICE 139	< 0.3
7711410	PE OFFICE	< 0.3
7711418	STAFF LOUNGE	< 0.3

Table Note:

\* Missing or Compromised Sample

Radon Testing Results		
Goshen ES		
Test Period: 12/28/15-12/31/15		
Kit Number	QC Type	Result
7708102	D (143)	< 0.3
7708121	D (21)	< 0.3
7711404	D (5)	< 0.3
7711423	D (7)	< 0.3
7711427	D (CTRL ROOM)	< 0.3
7708128	D (K4)	< 0.3
7711406	D (STAFF LOUNGE)	< 0.3
7708112	FB (22)	< 0.3
7708116	FB (MPR)	< 0.3
7712700	OB (0)	< 0.3

Table Note:

\* Missing or Compromised Sample

## ATTACHMENT C

### Laboratory Analytical Results

Radon test result report for:

**GOSHEN ES  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7712700	0	2015-12-28 @ 2:00 pm	2015-12-31 @ 12:00 pm	< 0.3	2016-01-05
7711424	1	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711421	10	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7708125	13	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708101	140	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7708106	142	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7708102	143	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7708131	143	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711434	144	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7708105	145	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711420	146	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7708107	147	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711443	2	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7708121	21	2015-12-28 @ 1:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708129	21	2015-12-28 @ 1:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708112	22	2015-12-28 @ 1:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708126	22	2015-12-28 @ 1:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7711442	3	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711405	4	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	0.6 ± 0.3	2016-01-05
7711404	5	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711403	5	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711407	6	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711416	7	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711423	7	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711413	8	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711412	9	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711426	ART	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7708123	BLDG MANAGER	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711415	COMPUTER RM 2	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711439	COMPUTER RM 1	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	1.0 ± 0.4	2016-01-05
7711427	CTRL ROOM	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711433	CTRL ROOM	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711417	DP	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711419	ESOL	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711414	GYM	@	@		
7711408	GYM	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711409	GYM	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05

Radon test result report for:

**GOSHEN ES**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7711411	GYM	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711430	HEALTH	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711425	HEALTH A	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711437	IA/IB	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	0.6 ± 0.3	2016-01-05
7708108	K1	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711432	K2	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7708104	K3	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	0.8 ± 0.4	2016-01-05
7708127	K4	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7708128	K4	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711422	LIBRARY	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7708158	MATERIAL ROOM	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711429	MEDIA	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	0.8 ± 0.3	2016-01-05
7711440	ML1015	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711444	ML973	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711438	ML974	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711402	ML977	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7708111	MO147	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7708116	MPR	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7708120	MPR	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7708124	MPR	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7708130	MPR STORAGE	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711428	MUSIC	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711441	OFFICE 139	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711410	PE OFFICE	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711406	STAFF LOUNGE	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711418	STAFF LOUNGE	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05

Radon test result report for:  
**MCPS PHASE 3 & 4  
TRANSIT BLANKS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7708218	TRANSIT 4	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708200	TRANSIT 1	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708190	TRANSIT 10	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708189	TRANSIT 11	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708191	TRANSIT 12	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708188	TRANSIT 13	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708197	TRANSIT 14	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708186	TRANSIT 15	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708185	TRANSIT 16	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708184	TRANSIT 17	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708182	TRANSIT 18	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708187	TRANSIT 18	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708199	TRANSIT 2	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708181	TRANSIT 20	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708180	TRANSIT 21	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708183	TRANSIT 22	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708178	TRANSIT 23	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708179	TRANSIT 24	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708177	TRANSIT 25	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708176	TRANSIT 26	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708174	TRANSIT 27	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708173	TRANSIT 28	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708175	TRANSIT 29	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708198	TRANSIT 3	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708172	TRANSIT 30	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708194	TRANSIT 5	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708196	TRANSIT 6	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708193	TRANSIT 7	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708192	TRANSIT 8	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708195	TRANSIT 9	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23



December  
23,  
2015

**\*\*LABORATORY ANALYSIS  
REPORT \*\***

Spike Sample Laboratory Results

Radon test result report for:  
**MCPS**

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

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

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

# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 173224

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

Date Start: 12/18/15 Date Stop: 12/21/15 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0929 Time Stop: 0929 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: 7705132, 7706208, Device No.'s: \_\_\_\_\_

7706211, 7706366, \_\_\_\_\_

7706380, 7706381 \_\_\_\_\_

F3 Left

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_ Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_ Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: \_\_\_\_\_ Device No.'s: \_\_\_\_\_

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_ Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_ Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: \_\_\_\_\_ Device No.'s: \_\_\_\_\_

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



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ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS  
Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

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## Chain of Custody

Project Name: MCPS Radon Phase III

Name of Schools:

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1. Burnt Mills ES     | 13. Georgian Frost ES | 25. Northlake Center  |
| 2. Burtonsville ES    | 14. Germantown ES     | 26. Olney ES          |
| 3. Cedar Grove ES     | 15. Goshen ES         | 27. Rosa Parks MS     |
| 4. Cloverly ES        | 16. Greencastle ES    | 28. Poolesville ES    |
| 5. Cold Spring ES     | 17. Greenwood ES      | 29. Poolesville HS    |
| 6. Damascus HS        | 18. Lake Seneca ES    | 30. Potomac ES        |
| 7. Darnestown ES      | 19. Laytonsville ES   | 31. Rock Terrace HS   |
| 8. Diamond ES         | 20. Col. E. Brooke MS | 32. Rosemary Hills ES |
| 9. Charles R. Drew ES | 21. Luxmanor ES       | 33. Carl Sandburg     |
| 10. DuFief ES         | 22. Magruder HS       | 34. Sequoyah ES       |
| 11. Thomas Edison HS  | 23. Thur. Marshall ES | 35. Stedwick ES       |
| 12. Robert Frost MS   | 24. Monocacy ES       | 36. Whetstone ES      |
- 

	Date	Initials
Radon Test Kits Deployed	12/28/15	JM
Radon Test Kits Sampled	12/31/15	JM
Radon Test Kits Shipped to Lab*	12/31/15	JM
Radon Test Kits Received by Lab*	1/4/16	JM

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