

## School / Facility Radon Testing Report Form

School Year: **24-25**

Facility:	Somerset Elementary School		
Address:	5811 Warwick Pl.		
	Chevy Chase, MD 20815		
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 checked="" type="checkbox"/> Initial Testing -or- <input type="checkbox"/> Follow-up Testing		
Testing Status:	<input checked="" type="checkbox"/> No Further Testing Needed -or- <input type="checkbox"/> Follow-Up Testing Required		

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

Mitigation -	Facility Radon Status:		
<input checked="" type="checkbox"/> Not Required <input type="checkbox"/> Required ( $\geq 4.0$ -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	33	Lowest Value (pCi/L)	<0.3
Number of Rooms ( $\geq 4.0$ -pCi/L)	0	Highest Value (pCi/L)	<0.3

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

## Testing

<input checked="" type="checkbox"/> Short-Term	Length of Test (days):	3	Date of Deployment and Retrieval (mm/dd/yy):	1/27/2025
<input type="checkbox"/> Long-Term				1/30/2025
Does the test period include weekends, school breaks or holidays?				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If “Yes” please explain/detail in the space below:				
Was HVAC operating under occupied conditions?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If “No” please explain/detail in the space below:				

**Testing** (continued)

Round of Testing	Detectors Deployed				
	Ground-Contact		Upper-Level(s)		Total
	Initial	Follow-Up	Initial	Follow-Up	
Test Locations <sup>1</sup>	30	0	3	0	33
Duplicates <sup>2</sup>	3	0	0	0	3
Field Blanks <sup>3</sup>	1	0	0	0	1
Grand Total					37

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	0	1
Office Blanks <sup>3, 4</sup>	1	0	1
			12

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

2 – One per shipping container from start of detector deployment

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

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

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

Spike Sample Lab Results. Measured values are satisfactory, i.e., within $\pm 25\%$ of the chamber's reference value?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Quality Control measurements comply with QA/QC requirements in the submitted testing organization's/company's QA plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<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 type="checkbox"/> No <input checked="" type="checkbox"/> No
For all Duplicate Samples <sup>1</sup> , the higher value is $\leq 2x$ the lower value?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input checked="" type="checkbox"/> No
For all Duplicate Samples <sup>1</sup> , Relative Percent Difference(s) (RPD) <sup>2</sup> are less than the Warning Level <sup>3</sup> ?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input checked="" 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input checked="" type="checkbox"/> No

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

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

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

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

Average concentration of the two duplicate test results	Warning Level	Control Level
< 2.0-pCi/L	1-pCi/L	Not applicable
Between 2.0 and 3.9-pCi/L	50% RPD	67% RPD
$\geq 4.0$ -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:	30	0	3	0	33
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:	0	0	0	0	0
Number of missing required test locations <sup>3</sup> :	0	0	0	0	0
Number of failed duplicate control locations:	0	0	0	0	0
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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Were valid measurements obtained in all occupied and intended to be occupied rooms in contact with the ground, and, if applicable, 10% of upper floor rooms?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<i>If Yes to both above – then Testing Status – ‘No Further Testing Needed’ mark ‘NA’ below and complete Conclusions section</i>		
<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> <i>If Yes, then - ‘No Further Testing Needed’ complete Conclusion section on first page.</i> <i>If No, then - ‘Follow-up Testing Required’ continue below.</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA

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

## Follow-Up Testing

### Required –

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

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

<b>Table 1- Radon Testing Results</b>		
<b>Somerset Elementary School</b>		
<b>Test Period: 1/27/2025 - 1/30/2025</b>		
Kit Number	Room / Area	Result
11904182	3	< 0.3
11930971	3	< 0.3
11930970	9	< 0.3
11930972	11	< 0.3
11930975	12	< 0.3
11930980	15	< 0.3
11930998	16	< 0.3
11930974	17	< 0.3
11930979	28	< 0.3
11930981	32	< 0.3
11930982	32	< 0.3
11930994	107	< 0.3
11930995	124	< 0.3
11930986	126	< 0.3
11930985	128	< 0.3
11930978	130	< 0.3
11930993	131	< 0.3
11904196	214	< 0.3
11930991	315	< 0.3
11930996	100F	< 0.3
11930977	APR	< 0.3
11930987	APR	< 0.3
11930997	CONFERENCE	< 0.3
11904180	GYM	< 0.3
11904181	GYM	< 0.3
11930992	GYM OFFICE	< 0.3
11930928	HEALTH	< 0.3
11930927	HEALTH OFFICE	< 0.3
11930968	KITCHEN OFFICE	< 0.3
11930969	KITCHEN OFFICE	< 0.3
11930967	MAIN OFFICE	< 0.3
11930988	MEDIA	< 0.3
11930989	MEDIA OFFICE	< 0.3
11930984	MEDIA WORK ROOM	< 0.3
11930990	MEDIA WORK ROOM	< 0.3
11930933	PRINCIPAL	< 0.3
11930962	WORK ROOM	< 0.3

[illegible]

Table 3 - QC Radon Testing Results			
Somerset Elementary School			
Test Period: 1/27/2025 - 1/30/2025			
Kit Number	QC Type	Room / Area	Result
11904182	D	3	< 0.3
11930981	D	32	< 0.3
11930968	FB	Kitchen Office	< 0.3
11930990	D	Media Work Room	< 0.3
11906885	OB	OFFICE BLANK	< 0.3
11906899	TB	TRAVEL BLANK	< 0.3

Table 3a - Duplicate Worksheet / Data Validation										
Somerset Elementary School										
Test Period: 01/27/2025 - 01/30/2025										
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
11930984	11930990	Media Work Room	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11930982	11930981	32	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11930971	11904182	3	0.3	0.3	✓	0.6	PASS	0.3	<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:  
**SOMERSET ES**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11930996	100F	2025-01-27 @ 11:00 am	2025-01-30 @ 10:00 am	< 0.3	2025-02-04
11930994	107	2025-01-27 @ 11:00 am	2025-01-30 @ 10:00 am	< 0.3	2025-02-04
11930972	11	2025-01-27 @ 12:00 pm	2025-01-30 @ 10:00 am	< 0.3	2025-02-04
11930975	12	2025-01-27 @ 12:00 pm	2025-01-30 @ 10:00 am	< 0.3	2025-02-04
11930995	124	2025-01-27 @ 11:00 am	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11930986	126	2025-01-27 @ 11:00 am	2025-01-30 @ 10:00 am	< 0.3	2025-02-04
11930985	128	2025-01-27 @ 11:00 am	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11930978	130	2025-01-27 @ 11:00 am	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11930993	131	2025-01-27 @ 11:00 am	2025-01-30 @ 10:00 am	< 0.3	2025-02-04
11930980	15	2025-01-27 @ 12:00 pm	2025-01-30 @ 10:00 am	< 0.3	2025-02-04
11930998	16	2025-01-27 @ 12:00 pm	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11930974	17	2025-01-27 @ 12:00 pm	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11904196	214	2025-01-27 @ 12:00 pm	2025-01-30 @ 10:00 am	< 0.3	2025-02-04
11930979	28	2025-01-27 @ 12:00 pm	2025-01-30 @ 10:00 am	< 0.3	2025-02-04
11904182	3	2025-01-27 @ 12:00 pm	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11930971	3	2025-01-27 @ 12:00 pm	2025-01-30 @ 10:00 am	< 0.3	2025-02-04
11930991	315	2025-01-27 @ 12:00 pm	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11930982	32	2025-01-27 @ 12:00 pm	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11930981	32	2025-01-27 @ 12:00 pm	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11930970	9	2025-01-27 @ 12:00 pm	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11930987	APR	2025-01-27 @ 11:00 am	2025-01-30 @ 10:00 am	< 0.3	2025-02-04
11930977	APR	2025-01-27 @ 11:00 am	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11930997	CONFERENCE	2025-01-27 @ 11:00 am	2025-01-30 @ 10:00 am	< 0.3	2025-02-04
11904180	GYM	2025-01-27 @ 12:00 pm	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11904181	GYM	2025-01-27 @ 12:00 pm	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11930992	GYM OFFICE	2025-01-27 @ 12:00 pm	2025-01-30 @ 10:00 am	< 0.3	2025-02-04
11930928	HEALTH	2025-01-27 @ 11:00 am	2025-01-30 @ 10:00 am	< 0.3	2025-02-04
11930927	HEALTH OFFICE	2025-01-27 @ 11:00 am	2025-01-30 @ 10:00 am	< 0.3	2025-02-04
11930968	KITCHEN OFFICE	2025-01-27 @ 12:00 pm	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11930969	KITCHEN OFFICE	2025-01-27 @ 12:00 pm	2025-01-30 @ 10:00 am	< 0.3	2025-02-04
11930967	MAIN OFFICE	2025-01-27 @ 11:00 am	2025-01-30 @ 10:00 am	< 0.3	2025-02-04
11930988	MEDIA	2025-01-27 @ 11:00 am	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11930989	MEDIA OFFICE	2025-01-27 @ 11:00 am	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11930984	MEDIA WORK ROOM	2025-01-27 @ 11:00 am	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11930990	MEDIA WORK ROOM	2025-01-27 @ 11:00 am	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11930933	PRINCIPAL	2025-01-27 @ 11:00 am	2025-01-30 @ 10:00 am	< 0.3	2025-02-04
11930962	WORK ROOM	2025-01-27 @ 11:00 am	2025-01-30 @ 11:00 am	< 0.3	2025-02-04

February 4, 2025

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

Radon test result report for:

**OFFICE  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11906885	O	2025-01-27 @ 11:00 am	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11906899	O	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	< 0.3	2025-02-04

February 4, 2025

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

Radon test result report for:

**TRAVEL  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11906900	T	2025-01-27 @ 11:00 am	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11926699	T	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	< 0.3	2025-02-04

# 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

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

---

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## Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Testing January 27<sup>th</sup> – January 30<sup>th</sup>, 2024

Name of Schools:

1. Robert Frost MS
2. Walter Johnson HS
3. North Chevy Chase ES
4. Somerset ES

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	Date	Initials
Radon Test Kits Deployed	01/27/2025	DM
Radon Test Kits Collected	01/30/2025	DM
Radon Test Kits Shipped to Lab*	01/31/2025	DM
Radon Test Kits Received by Lab*	02/03/2025	DM

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



### **MCPS RADON TESTING – EXECUTIVE SUMMARY**

Site Name	Somerset Elementary School
Date of Test Report	05/12/2022
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	1
# Rooms $\geq$ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	<0.3 pCi/L

### **Project Status**

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



May 12, 2022

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

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

Location: Somerset Elementary School  
5811 Warwick Place,  
Chevy Chase, MD 20815

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 Somerset Elementary School, located at 5811 Warwick Place, Chevy Chase, MD 20815 (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 on March 21, 2022 and deployed three (3) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

1. Rooms with missing test kits from the Radon 2022 testing period (i.e. test kit was deployed but not recovered),
2. Rooms with invalidated test kits from the Radon 2022 testing period (e.g. an open window in the room or disturbed test kit),
3. Rooms which were locked/inaccessible during the Radon 2022 testing period,
4. Rooms with elevated radon results (i.e.  $\geq 3.5$  pCi/L),
5. Rooms previously tested for radon but not tested in Radon 2022, and
6. Additional rooms that require testing (if applicable.)

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

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

KCI returned to the site on March 24, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

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

These tests represent:

- Follow-up to initial testing.

These tests were conducted to:

- Evaluate radon concentrations at the facility.

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the low 40°Fs and high temperatures ranged from the low 50°Fs to the low 70°Fs. Maximum sustained winds ranged from 0-29 miles per hour. Average humidity was around 56% with 0.51 inches of precipitation (rain) was recorded during testing period.

### **Results:**

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

The results of the radon test analysis indicated the following:

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

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

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

Sincerely,



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

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

# ATTACHMENT A

## Floor Plan With Test Locations

## ATTACHMENT B

### Radon Test Summary Spreadsheet

**Table Notes:**

AC- Activated Charcoal

ACI- Air Check, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

OC- Quality Control



Table 1- Radon Testing Results		
Somerset ES RT		
Test Period: 03/21/2022 - 03/24/2022		
Kit Number	Room / Area	Result
11131704	32	< 0.3
11131705	32	< 0.3
11131706	32	< 0.3

Table 2- Radon Testing Results			
Somerset ES RT			
Test Period: 03/21/2022 - 03/24/2022			
Kit Number	QC Type	Room / Area	Result
11131704	D	32	< 0.3
11131706	FB	32	< 0.3
11139902	OB	OFFICE BLANK	< 0.3
11139928	TB	TRAVEL BLANK	< 0.3



## ATTACHMENT C

### Laboratory Analytical Results

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March 28, 2022

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

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Radon test result report for:  
**SOMERSET ES**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
11131705	32	2022-03-21 @ 10:00 am	2022-03-24 @ 11:00 am	< 0.3	2022-03-28
11131706	32	2022-03-21 @ 10:00 am	2022-03-24 @ 11:00 am	< 0.3	2022-03-28
11131704	32	2022-03-21 @ 10:00 am	2022-03-24 @ 11:00 am	< 0.3	2022-03-28

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# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 204620

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

Date Start: 3/18/22 Date Stop: 3/21/22 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0705 Time Stop: 0705 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

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

11139367, 11139368, 11139371, \_\_\_\_\_

11139710, 11139717 \_\_\_\_\_

E3 Right

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

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

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

\_\_\_\_\_

\_\_\_\_\_

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

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

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

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March 30, 2022

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

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Radon test result report for:

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

---

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

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## Radon Test Kit Chain of Custody

Project Name: MCPS Radon – March 2022 Schools – Retesting

Name of Schools:

1. Rosa Parks MS
2. Poolesville ES
3. Wyngate ES
4. Seven Locks ES
5. Walt Whitman HS
6. Somerset ES
7. Rock Creek Forest ES
8. Walter Johnson HS
9. Westbrook ES
10. Westland MS
11. Farmland ES
12. College Gardens ES
13. Julius West MS
14. Robert Frost MS
15. Carl Sandburg Learning Center

---

	Date	Initials
Radon Test Kits Deployed	03/21/2022	BMM
Radon Test Kits Collected	03/24/2022	BMM
Radon Test Kits Shipped to Lab*	03/25/2022	BMM
Radon Test Kits Received by Lab*	03/28/2022	BMM

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



### MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Somerset Elementary School
Date of Test Report	2/21/2022
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing <del>HVAC Upgrade</del> Window Replacement New Addition New Facility
# Rooms Tested	30
# Rooms $\geq 4.0$ pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	0.5 pCi/L

Project Status:

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



February 21, 2022

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

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

Location: Somerset Elementary School  
5811 Warwick Pl.  
Chevy Chase, MD 20815

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 Somerset Elementary School, located at 5811 Warwick Place Chevy Chase, MD 20815 (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 on January 18, 2022 and deployed thirty four (34) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

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

KCI returned to the site on January 21, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc.

is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

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

These tests represent:

- Follow-up to initial testing.

These tests were conducted to:

- Evaluate radon concentrations at the facility.

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the 30s and high temperatures ranged from the mid 30s to the mid 40s Fahrenheit. Maximum sustained winds ranged from 7-20 miles per hour. Average humidity was around 50% with .05 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	

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

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

Sincerely,



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

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

# ATTACHMENT A

## Floor Plan With Test Locations

## ATTACHMENT B

### Radon Test Summary Spreadsheet

**Table Notes:**

AC- Activated Charcoal

ACI- Air Check, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

OC- Quality Control

Table 1- Radon Testing Results		
Somerset ES		
Test Period: 01/18/2022-01/21/2022		
Kit Number	Room / Area	Result
11106771	6	< 0.3
11106772	6	< 0.3
11106799	9	< 0.3
11106798	11	< 0.3
11106790	15	< 0.3
11106786	16	< 0.3
11106791	16	< 0.3
11106778	17	< 0.3
11106785	19	< 0.3
11106766	22	< 0.3
11106797	28	0.5
11106782	100	< 0.3
11106773	101	< 0.3
11106774	101	< 0.3
11106781	101	< 0.3
11106796	101	< 0.3
11106770	103	< 0.3
11106795	131	< 0.3
11106765	214	< 0.3
11106776	313	< 0.3
11106780	100B	< 0.3
11106788	100B	< 0.3
11106783	101B	< 0.3
11106787	101C	< 0.3
11106789	101D	< 0.3
11106784	19H	< 0.3
11106792	1A	< 0.3
11106793	ART	< 0.3
11106501	BUILDING SERVICES	< 0.3
11106509	BUILDING SERVICES	< 0.3
11106775	CAFETERIA	< 0.3
11106777	CAFETERIA	< 0.3
11106794	GYM	< 0.3
11106800	GYM	< 0.3



Table 2- Radon Testing Results			
Somerset ES			
Test Period: 01/18/22-01/21/22			
Kit Number	QC Type	Room / Area	Result
11106509	FB	Building services	< 0.3
11106791	D	16	< 0.3
11106774	D	101	< 0.3
11106781	FB	101	< 0.3
11106780	D	100b	< 0.3
11106397	OB	OFFICE BLANK	< 0.3
11106400	FB	TRAVEL BLANK	< 0.3



## ATTACHMENT C

### Laboratory Analytical Results

Radon test result report for:  
**SOMERSET ES**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11106782	100	2022-01-18 @ 9:00 am	2022-01-21 @ 9:00 am	< 0.3	2022-01-26
11106788	100B	2022-01-18 @ 10:00 am	2022-01-21 @ 9:00 am	< 0.3	2022-01-26
11106780	100B	2022-01-18 @ 10:00 am	2022-01-21 @ 9:00 am	< 0.3	2022-01-26
11106796	101	2022-01-18 @ 9:00 am	2022-01-21 @ 9:00 am	< 0.3	2022-01-26
11106773	101	2022-01-18 @ 9:00 am	2022-01-21 @ 9:00 am	< 0.3	2022-01-26
11106774	101	2022-01-18 @ 9:00 am	2022-01-21 @ 9:00 am	< 0.3	2022-01-26
11106781	101	2022-01-18 @ 9:00 am	2022-01-21 @ 9:00 am	< 0.3	2022-01-26
11106783	101B	2022-01-18 @ 10:00 am	2022-01-21 @ 9:00 am	< 0.3	2022-01-26
11106787	101C	2022-01-18 @ 10:00 am	2022-01-21 @ 9:00 am	< 0.3	2022-01-26
11106789	101D	2022-01-18 @ 10:00 am	2022-01-21 @ 9:00 am	< 0.3	2022-01-26
11106770	103	2022-01-18 @ 10:00 am	2022-01-21 @ 9:00 am	< 0.3	2022-01-26
11106798	11	2022-01-18 @ 9:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26
11106795	131	2022-01-18 @ 10:00 am	2022-01-21 @ 9:00 am	< 0.3	2022-01-26
11106790	15	2022-01-18 @ 9:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26
11106786	16	2022-01-18 @ 9:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26
11106791	16	2022-01-18 @ 9:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26
11106778	17	2022-01-18 @ 9:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26
11106785	19	2022-01-18 @ 9:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26
11106784	19H	2022-01-18 @ 9:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26
11106792	1A	2022-01-18 @ 8:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26
11106765	214	2022-01-18 @ 10:00 am	2022-01-21 @ 9:00 am	< 0.3	2022-01-26
11106766	22	2022-01-18 @ 11:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26
11106797	28	2022-01-18 @ 9:00 am	2022-01-21 @ 8:00 am	0.5 ± 0.4	2022-01-26
11106776	313	2022-01-18 @ 10:00 am	2022-01-21 @ 9:00 am	< 0.3	2022-01-26
11106772	6	2022-01-18 @ 10:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26
11106771	6	2022-01-18 @ 10:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26
11106799	9	2022-01-18 @ 8:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26
11106793	ART	2022-01-18 @ 8:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26
11106509	BUILDING SERVICES	2022-01-18 @ 8:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26
11106501	BUILDING SERVICES	2022-01-18 @ 8:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26
11106777	CAFETERIA	2022-01-18 @ 9:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26
11106775	CAFETERIA	2022-01-18 @ 9:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26
11106794	GYM	2022-01-18 @ 8:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26
11106800	GYM	2022-01-18 @ 8:00 am	2022-01-21 @ 8:00 am	< 0.3	2022-01-26

# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 203404

NOMINAL Conditions: Radon Conc 16.2 pCi/L Rel. Hum 28.8 % Temp. 59.9 F

Date Start: 12/24/21 Date Stop: 12/27/21 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0809 Time Stop: 0809 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: (2) Char Bags- Device No.'s: \_\_\_\_\_

9341721, 9341722

G4 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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December 31, 2021

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

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Radon test result report for:

**SK**  
**MA** MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within  $\pm 25\%$  of the chamber's reference value (16.2 pCi/L).

---

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9341721	1	2021-12-24 @ 8:00 am	2021-12-27 @ 8:00 am	11.6 $\pm$ 0.9	2021-12-31
9341722	1	2021-12-24 @ 8:00 am	2021-12-27 @ 8:00 am	15.4 $\pm$ 1.2	2021-12-31

---

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



---

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

---

## Radon Test Kit Chain of Custody

Project Name: MCPS Radon – January 2022 Schools

Name of Schools:

1. Poolesville ES
2. Rosa Parks MS
3. Seven Locks ES
4. Somerset ES
5. Thomas Pyle MS
6. Walt Whitman HS
7. Walter Johnson HS
8. Westland MS
9. Wyngate ES

---

	Date	Initials
Radon Test Kits Deployed	01/18/2022	JM
Radon Test Kits Collected	01/21/2022	JM
Radon Test Kits Shipped to Lab*	01/21/2022	JM
Radon Test Kits Received by Lab*	01/23/2022	JM

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

## RADON SCREENING SURVEY – FOLLOW-UP SOMERSET ELEMENTARY SCHOOL

5811 Warwick Place, Chevy Chase, Maryland 20815

## EXECUTIVE SUMMARY

Date of Test Report:	4/1/16
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	1
# Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	<0.4
High Value:	<0.4
Confirmed Rooms $\geq$ 4.0 pCi/L US EPA Action Level	0

### Summary of Sampling Events $\geq 4.0$ pCi/L

[illegible]





## MCPS RADON TESTING

### Executive Summary: Somerset Elementary School

Date of Test Report:	4/1/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	1
# 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.



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

April 1, 2016

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

Re: **Radon Testing Services**  
KCI Job # 12146341.31

Location: Somerset Elementary School  
5811 Warwick Place  
Chevy Chase, MD 20815

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 Somerset Elementary School, located at 5811 Warwick Place in Chevy Chase, Maryland 20815 (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 March 8, 2016 and deployed two (2) 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 March 11, 2016 to retrieve the radon sampling test kits. KCI 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 (certification # ARL0007) located at 929 Mount

Zion Road, Lebanon, Pennsylvania.

### **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 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 (410) 316-7800.

Sincerely,



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

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

# ATTACHMENT A

## Floor Plan With Test Locations

## ATTACHMENT B

### Radon Test Summary Spreadsheet

**Table Notes:**

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank\*

PM- Project Manager

QC- Quality Control

\*Office blanks were submitted at a rate of 1% for all samples deployed in Phase 11 testing. Office blanks were not submitted under each school individually.

Radon Testing Results		
Somerset ES		
Test Period: 03/08/16-03/11/16		
Kit Number	Room / Area	Result
3029112	19	<0.4
3029001	19	<0.4

Table Note:

\* Missing or Compromised Sample



## ATTACHMENT C

### Laboratory Analytical Results

NRPP 10511AL  
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 12146341

KCI Technologies  
936 Ridgebrook Rd  
Sparks MD 21152

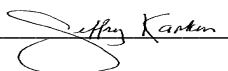
Somerset ES  
5811 Warwick Place  
Chevy Chase MD 20815

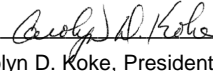
Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3016780	3029112	03/08/2016 9:28 am	03/11/2016 9:15 am	Unit 19 Cafeteria Basement	<0.4
3016781	3029001	03/08/2016 9:30 am	03/11/2016 9:15 am	Unit 19 Cafeteria Basement	<0.4

**Comment:** A copy of this report was emailed to tehsin@kci.com.

Distributed by: KCI Technologies, Inc.

Date Received: 03/15/2016    Date Logged: 03/15/2016    Date Analyzed: 03/15/2016    Date Reported: 03/16/2016

Report Reviewed By: 

Report Approved By: 

Carolyn D. Koke, President, AccuStar Labs

**Disclaimer:**

The uncertainty of this radon measurement is  $\pm 10\%$ . 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.

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.

## Radon Device Type Open Face Canister

**Send Written Report To:**

Name	KCI Technologies, Inc		
Address	936 Ridgebrook Road		
Address			
City / Town	Sparks		
State/Province	Postal Code	MD	21152
Report Country	Baltimore County		
Email Address	tehsin@kci.com		

**Site Tested:**

Site Name	Somerset ES	
Address	5811 Warwick Place	
Address		
City / Town	Chevy Chase	
State/Province	MD	20815
Test Country	Montgomery County	
Project Number	12146341	

**Contact Information:**

Contact	Tehsin Aurangabadwala
Telephone	410-891-1726
Technician	
Cert. Number	
Signature	

[illegible]

NRPP 10511AL  
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 12146341

KCI Technologies  
936 Ridgebrook Rd  
Sparks MD 21152

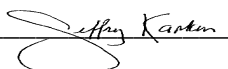
MCPS Radon Phase 11 Office Blank

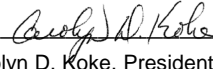
Log Number	Device Number	Test Exposure Duration:	Area Tested	Result (pCi/L)
3016739	3029191	03/08/2016 10:00 am 03/11/2016 10:00 am	Office Blank	<0.4

**Comment:** A copy of this report was emailed to tehsin@kci.com.

Distributed by: KCI Technologies, Inc.

Date Received: 03/15/2016 Date Logged: 03/15/2016 Date Analyzed: 03/15/2016 Date Reported: 03/16/2016

Report Reviewed By: 

Report Approved By: 

Carolyn D. Koke, President, AccuStar Labs

**Disclaimer:**

The uncertainty of this radon measurement is  $\pm 10\%$ . 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.

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 10511AL  
NRSB ARL0007

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

Laboratory Report for:

KCI Technologies  
936 Ridgebrook Rd  
Sparks MD 21152

Property Tested:

MCPS  
Transit Blanks

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3010588	3028953	01/19/2016 1:00 pm	01/22/2016 9:30 am	1	< 0.4
3010589	3028955	01/19/2016 1:00 pm	01/22/2016 9:30 am	2	< 0.4
3010590	3028954	01/19/2016 1:00 pm	01/22/2016 9:30 am	3	< 0.4
3010591	3028997	01/19/2016 1:00 pm	01/22/2016 9:30 am	4	< 0.4

**Comment:** AMENDED REPORT for 3028953-8955, 3028997 on 2/22/16 to add all missing information from the blank datasheet. A copy of this report was emailed to james.mouldsdales@kci.com.

Distributed by: KCI Technologies, Inc.

Date Received: 01/27/2016    Date Logged: 01/27/2016    Date Analyzed: 01/28/2016    Date Reported: 01/28/2016

Report Reviewed By: Christie Bates

Report Approved By: Carolyn D. Koke

**Disclaimer:**

Carolyn D. Koke, President, AccuStar Labs

The uncertainty of this radon measurement is +/- 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.

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.



Return canisters for analysis to:  
AccuStar Labs  
929 Mt. Zion Rd., Lebanon, PA 17046  
800-523-4964

AccuStar Labs – Lebanon, PA  
INFORMATION FORM - Large Buildings -  
Projects - Apartments

Instructions on back of form  
Read instructions carefully  
Discrepancies will invalidate tests

### Test Site Info

Name of Building/Project or Owner: Transit  
Site Address: Transit  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ County: \_\_\_\_\_

Projects Contact Name: Don Coale Phone: \_\_\_\_\_ Email: \_\_\_\_\_

Do not use this form in  
New Jersey or Florida  
Call for correct forms.

Multi-Page Report Y-N

LAB USE ONLY			
Detector Serial#	ROOM NAME & NUMBER - LOCATION OF DETECTOR IN ROOM (indicate duplicates and blanks)	Floor	Wgt. Gain
3028953	Transit	1	204
8955	Transit	1	204
8954	Transit	1	204
8997	Transit	1	204

Start Time Include AM/PM	Stop Time Include AM/PM	Start Date	Stop Date
9:30am	9:30am	1/19/16	1/22/16
		1/19/16	
		1/19/16	
		1/19/16	

1/27/2016

KCI Technologies, Inc.

3010588 3028953 ACPC275B EXP12/31/2018

Both Placed by and Retrieved by signatures are required

Canisters placed by \_\_\_\_\_ # \_\_\_\_\_

Canisters retrieved by \_\_\_\_\_ # \_\_\_\_\_

Owner waives confidentiality by signing here \_\_\_\_\_ Date 1/22/16

Attention: James Mouldale

Company Name: KCI Tech  
Address: 936 Ridgebrook  
City: Sparks State: MD Zip: 21152  
Phone: 410-599-3826  
EMAIL Results to: James.Mouldale@kci.com

Send Results To:

Company Name:

Address:

City:

Phone:

EMAIL Results to:

Were general operating conditions maintained?  
Yes - No explain if NO

Were closed building conditions maintained?  
Yes - No explain if NO

Normal Temp. Yes - No  
Normal Humidity Yes - No  
Windy Y-N Rainy Y-N

Make sure information is complete and correct.  
If a recalculation is requested there is a \$10.00 recalc fee PER Canister.

Mailing: PO Box 990 Jonestown, PA 17038  
Shipping: 929 Mt Zion Road, Lebanon, PA 17046  
800-523-4964 fax 717-274-5662

NEHA 10511AL NRSB ARL 0007

Revision 5  
4/2015

# TCS INDUSTRIES, INC.

(717) 657-7032

RADON GAS DETECTION

www.radondetek.com

4326 Crestview Road, Harrisburg, PA 17112

James Mouldsdale  
KCI  
936 Ridgebrook Rd.  
Sparks, MD 21152

April 04, 2016

Dear Mr. Mouldsdale:

The spike exposure data were:

Start 04/04/16 @ 1110 hrs EDT  
End 04/06/16 @ 1113 hrs EDT

AC 3029218, 3029219, 3029220, 3029217, 3029214, 3029217, and 3029166

Average radon concentration was 10.6 pCi/L +/- 5%

Avg. Temp. was 71F  
Avg. RH was 51%  
Elevation was 490 feet above sea level

Sincerely,



Carl H. Distenfeld, CHP

\*\*\*\*\*  
TCS Radon Chamber NRSB CHM 0002  
\*\*\*\*\*



NRPP 10511AL  
NRSB ARL0007

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

Laboratory Report for:

Property Tested:

KCI Technologies  
936 Ridgebrook Rd  
Sparks MD 21152

MCPS  
Radon Spike Sample Laboratory Results

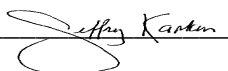
Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3020102	3029166	04/04/2016 11:10 am	04/06/2016 11:13 am	Not Indicated	11.9
3020103	3029214	04/04/2016 11:10 am	04/06/2016 11:13 am	Not Indicated	11.5
3020104	3029217	04/04/2016 11:10 am	04/06/2016 11:13 am	Not Indicated	10.7
3020105	3029218	04/04/2016 11:10 am	04/06/2016 11:13 am	Not Indicated	11.3
3020106	3029219	04/04/2016 11:10 am	04/06/2016 11:13 am	Not Indicated	11.0
3020107	3029220	04/04/2016 11:10 am	04/06/2016 11:13 am	Not Indicated	10.5

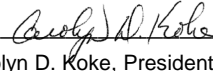
**Comment:** A copy of this report was emailed to james.mouldsdale@kci.com.

Distributed by: KCI Technologies, Inc.

Date Received: 04/07/2016    Date Logged: 04/07/2016    Date Analyzed: 04/07/2016    Date Reported: 04/08/2016

**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.

Report Reviewed By: 

Report Approved By:   
Carolyn D. Koke, President, AccuStar Labs

**Disclaimer:**

The uncertainty of this radon measurement is  $\pm 10\%$ . 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.

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.





## MCPS RADON TESTING

### Executive Summary: Somerset Elementary School

Date of Test Report:	2/29/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	33
# 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.



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

February 29, 2016

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

Re: **Radon Testing Services**  
KCI Job # 12146341.26

Location: Somerset Elementary School  
5811 Warwick Place  
Chevy Chase, MD 20815

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 Somerset Elementary School, located at 5811 Warwick Place in Chevy Chase, Maryland 20815 (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 February 1, 2016 and deployed forty-four (44) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on February 4, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936

Butler Bridge Road, Mills River, North Carolina.

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

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

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

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

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

Sincerely,



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

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

# ATTACHMENT A

## Floor Plan With Test Locations

## ATTACHMENT B

### Radon Test Summary Spreadsheet



**Table Notes:**

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

Radon Testing Results		
Somerset Elementary School		
Test Period: 02/01/16-02/04/16		
Kit Number	Room / Area	Result
7731543	1	0.7
7731544	1	0.9
7731572	3	0.6
7731538	9	< 0.3
7731532	11	0.6
7731560	12	< 0.3
7731537	15	< 0.3
7731545	16	< 0.3
7731517	17	0.6
7731549	18	0.7
7731555	19	0.6
7731550	28	< 0.3
7731552	32	0.6
7731553	34	0.5
7731566	100	< 0.3
7731546	101	< 0.3
7731558	101	0.5
7731571	103	< 0.3
7731528	124	0.8
7731524	130	0.5
7731559	135	0.7
7731547	145	< 0.3
7731533	210	0.9
7731542	216	< 0.3
7731529	222	< 0.3
7731530	319	< 0.3
7731567	101A	0.6
7731564	101B	< 0.3
7731565	101C	< 0.3
7731570	103A	< 0.3
7731556	* 19 (Missing)	-
7731523	19C	0.6
7731554	19H	0.6
7731525	19K	1.0
7731526	19L	< 0.3
7731540	1A	< 0.3

Table Note:

\* Missing or Compromised Sample

Radon Testing Results		
Somerset Elementary School		
Test Period: 02/01/16-02/04/16		
Kit Number	QC Type	Result
7731561	D (12)	< 0.3
7731548	D (145)	< 0.3
7731531	D (210)	< 0.3
7731551	D (32)	< 0.3
7731539	FB (135)	< 0.3
7731535	FB (319)	< 0.3
7726870	OB (0)	< 0.3
7726871	OB (0)	< 0.3

Table Note:

\* Missing or Compromised Sample

## ATTACHMENT C

### Laboratory Analytical Results

Radon test result report for:  
**SOMERSET ELEMENTARY SCHOOL  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7726870	0	2016-02-01 @ 2:00 pm	2016-02-04 @ 2:00 pm	< 0.3	2016-02-09
7726871	0	2016-02-01 @ 2:00 pm	2016-02-04 @ 2:00 pm	< 0.3	2016-02-09
7731543	1	2016-02-01 @ 11:00 am	2016-02-04 @ 10:00 am	0.7 ± 0.3	2016-02-08
7731544	1	2016-02-01 @ 11:00 am	2016-02-04 @ 10:00 am	0.9 ± 0.4	2016-02-09
7731566	100	2016-02-01 @ 10:00 am	2016-02-04 @ 10:00 am	< 0.3	2016-02-08
7731546	101	2016-02-01 @ 10:00 am	2016-02-04 @ 10:00 am	< 0.3	2016-02-08
7731558	101	2016-02-01 @ 10:00 am	2016-02-04 @ 10:00 am	0.5 ± 0.3	2016-02-08
7731567	101A	2016-02-01 @ 11:00 am	2016-02-04 @ 10:00 am	0.6 ± 0.3	2016-02-09
7731564	101B	2016-02-01 @ 10:00 am	2016-02-04 @ 10:00 am	< 0.3	2016-02-09
7731565	101C	2016-02-01 @ 10:00 am	2016-02-04 @ 10:00 am	< 0.3	2016-02-08
7731571	103	2016-02-01 @ 11:00 am	2016-02-04 @ 10:00 am	< 0.3	2016-02-08
7731570	103A	2016-02-01 @ 11:00 am	2016-02-04 @ 10:00 am	< 0.3	2016-02-09
7731532	11	2016-02-01 @ 11:00 am	2016-02-04 @ 10:00 am	0.6 ± 0.3	2016-02-08
7731561	12	2016-02-01 @ 11:00 am	2016-02-04 @ 10:00 am	< 0.3	2016-02-08
7731560	12	2016-02-01 @ 11:00 am	2016-02-04 @ 10:00 am	< 0.3	2016-02-09
7731528	124	2016-02-01 @ 1:00 pm	2016-02-04 @ 10:00 am	0.8 ± 0.3	2016-02-08
7731524	130	2016-02-01 @ 1:00 pm	2016-02-04 @ 10:00 am	0.5 ± 0.3	2016-02-08
7731539	135	2016-02-01 @ 1:00 pm	2016-02-04 @ 10:00 am	< 0.3	2016-02-08
7731559	135	2016-02-01 @ 1:00 pm	2016-02-04 @ 10:00 am	0.7 ± 0.3	2016-02-08
7731547	145	2016-02-01 @ 1:00 pm	2016-02-04 @ 10:00 am	< 0.3	2016-02-08
7731548	145	2016-02-01 @ 1:00 pm	2016-02-04 @ 10:00 am	< 0.3	2016-02-08
7731537	15	2016-02-01 @ 12:00 pm	2016-02-04 @ 10:00 am	< 0.3	2016-02-08
7731545	16	2016-02-01 @ 11:00 am	2016-02-04 @ 10:00 am	< 0.3	2016-02-08
7731517	17	2016-02-01 @ 12:00 pm	2016-02-04 @ 10:00 am	0.6 ± 0.4	2016-02-09
7731549	18	2016-02-01 @ 11:00 am	2016-02-04 @ 10:00 am	0.7 ± 0.3	2016-02-08
7731556	19	@	@		
7731555	19	2016-02-01 @ 12:00 pm	2016-02-04 @ 10:00 am	0.6 ± 0.3	2016-02-09
7731523	19C	2016-02-01 @ 12:00 pm	2016-02-04 @ 10:00 am	0.6 ± 0.3	2016-02-09
7731554	19H	2016-02-01 @ 12:00 pm	2016-02-04 @ 10:00 am	0.6 ± 0.3	2016-02-08
7731525	19K	2016-02-01 @ 12:00 pm	2016-02-04 @ 10:00 am	1.0 ± 0.4	2016-02-09
7731526	19L	2016-02-01 @ 12:00 pm	2016-02-04 @ 10:00 am	< 0.3	2016-02-09
7731540	1A	2016-02-01 @ 11:00 am	2016-02-04 @ 10:00 am	< 0.3	2016-02-08
7731533	210	2016-02-01 @ 1:00 pm	2016-02-04 @ 10:00 am	0.9 ± 0.3	2016-02-08
7731531	210	2016-02-01 @ 1:00 pm	2016-02-04 @ 10:00 am	< 0.3	2016-02-09
7731542	216	2016-02-01 @ 1:00 pm	2016-02-04 @ 10:00 am	< 0.3	2016-02-09
7731529	222	2016-02-01 @ 1:00 pm	2016-02-04 @ 10:00 am	< 0.3	2016-02-08
7731550	28	2016-02-01 @ 12:00 pm	2016-02-04 @ 10:00 am	< 0.3	2016-02-08

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February 23, 2016

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

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Radon test result report for:  
**SOMERSET ELEMENTARY SCHOOL  
MAIN**

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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7731572	3	2016-02-01 @ 11:00 am	2016-02-04 @ 10:00 am	0.6 ± 0.3	2016-02-08
7731530	319	2016-02-01 @ 3:00 pm	2016-02-04 @ 3:00 pm	< 0.3	2016-02-08
7731535	319	2016-02-01 @ 3:00 pm	2016-02-04 @ 3:00 pm	< 0.3	2016-02-08
7731552	32	2016-02-01 @ 12:00 pm	2016-02-04 @ 10:00 am	0.6 ± 0.3	2016-02-08
7731551	32	2016-02-01 @ 12:00 pm	2016-02-04 @ 10:00 am	< 0.3	2016-02-09
7731553	34	2016-02-01 @ 12:00 pm	2016-02-04 @ 10:00 am	0.5 ± 0.3	2016-02-08
7731538	9	2016-02-01 @ 11:00 am	2016-02-04 @ 10:00 am	< 0.3	2016-02-08

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

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

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

February  
15,  
2016

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

Spike Sample Laboratory Results

Radon test result report for:  
**MCPS**

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

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



# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCF Technologies Inc. Job Number 173704

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

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

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

Time Start: 0926 Time Stop: 0926

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

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

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

7718281, 7718282, 7718291,

7718288, 7718289, 7718273

3 Left

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

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

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

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

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

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

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

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

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

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

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

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

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



## Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 7 (2-1-2016)

Name of School/Facility:

- |                            |                             |                            |
|----------------------------|-----------------------------|----------------------------|
| 1. Wyngate E.S.            | 10. Bethesda Depot          | 18. Stone Mill E.S.        |
| 2. Seven Locks E.S.        | 11. Bethesda Trans Depot    | 19. Strawberry Knoll E.S.  |
| 3. Takoma Park M.S.        | 12. Sligo M.S.              | 20. Shady Grove M.S.       |
| 4. Somerset E.S.           | 13. Stonegate E.S.          | 21. Washington Grove E.S.  |
| 5. Silver Spring Int. M.S. | 14. Randolph Transportation | 22. Sherwood E.S.          |
| 6. Sligo Creek E.S.        | 15. Earl B. Wood M.S.       | 23. Woodfield E.S.         |
| 7. Tilden M.S.             | 16. Sargent Shriver E.S.    | 24. Taylor Learning Center |
| 8. Tilden Center           | 17. Thomas Wooten H.S.      | 25. Kingsley Wilderness    |
| 9. Bethesda Annex          |                             |                            |

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	Date	Initials
Radon Test Kits Deployed	2/1/16	JM
Radon Test Kits Collected	2/4/16	JM
Radon Test Kits Shipped to Lab*	2/4/16	JM
Radon Test Kits Received by Lab*	2/8/16	JM

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



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

## Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 7 (2-2-2016)

Name of School/Facility:

- |                                |                                |
|--------------------------------|--------------------------------|
| 1. Concord Center              | 8. Food & Nutritional Services |
| 2. Lynnbrook Center            | 9. Fairland Center             |
| 3. Carver (CESC)               | 10. Redland M.S. (retest)      |
| 4. Spring Mill (area 1 Office) | 11. Clarksburg Trans Depot     |
| 5. Wheaton H.S                 | 12. Clarksburg Main Depot      |
| 6. Montrose Center             | 13. Clarksburg E.S.            |
| 7. West Farm Trans Depot       |                                |

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	Date	Initials
Radon Test Kits Deployed	2/2/16	JM
Radon Test Kits Collected	2/5/16	JM
Radon Test Kits Shipped to Lab*	2/5/16	JM
Radon Test Kits Received by Lab*	2/9/16	JM

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