



## School / Facility Radon Testing Report Form

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

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

- Testing Results – lab/detector Identification, by room number/name (alpha-numeric order) as depicted on facility map/floor plan provided by the facility/school at the time of test device deployment;
- Summary Results – list of rooms by test result  $\geq 2.0$ -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.

School Year: **23-24**

Facility:	Herbert Hoover Middle School
Address:	8810 Postoak Road
	Potomac, MD 20854

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

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

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

**Detector and Deployment**

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

**Testing**

<input checked="" type="checkbox"/> Short-Term	Length of Test (days):	3	Date of Deployment and Retrieval (mm/dd/yy):	01/22/24
<input type="checkbox"/> Long-Term				01/25/24
Does the test period include weekends, school breaks or holidays?				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<i>If "Yes" please explain/detail in the space below:</i>				
Was HVAC operating under occupied conditions?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<i>If "No" please explain/detail in the space below:</i>				

Testing (continued)

	Detectors Deployed		
	Ground-Contact	Upper-Level(s)	Total
Test Locations <sup>1</sup>	90	4	94
Duplicates <sup>2</sup>	11	1	12
Field Blanks <sup>3</sup>	4	0	4
Grand Total			110

1 – include all detectors deployed (duplicates, field blanks); 1 detector per occupied (or intended to be occupied) ground-contact space ≤ 2,000-square feet; large spaces ≥ 2,000-square feet - 1 detector per 2,000-square feet or part thereof); and upper floors - 10% of all occupied or intended to be occupied rooms per floor (these are in addition to ground contact locations)

2 - 10% of all locations tested, per floor

3 – 5% of all locations tested, per floor

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

A Quality Assurance plan that is consistent with ANSI/AARST MS-QA (Radon Measurement Systems Quality Assurance) was submitted under separate cover, and is available to review at the MCPS Radon Testing and Mitigation Program website. The following number of QA/QC samples are associated this facility.

Spike Samples <sup>1</sup>	6	Trip Blank(s) <sup>2</sup>	1	Office Blank(s) <sup>3,4</sup>	1
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1 - 3% of EIC detectors; and 3% from each LOT of CAD and ATD detectors; a maximum of 6-spiked measurements per month for both EIC detectors and each LOT of CAD and ATD detectors.

2 – One per shipping container from start of detector deployment

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

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

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

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

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

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

	Ground-Contact	Upper-Level(s)	Total
Number of test locations:	90	4	94
Number of locations $\geq 8.0$ -pCi/L:	0	0	0
Number of locations $\geq 4.0$ and $\leq 8$ -pCi/L:	0	0	0
Number of locations $\geq 2.7$ and $\leq 4$ -pCi/L:	0	0	0
Number of locations $\geq 2.0$ and $\leq 4$ -pCi/L:	0	0	0
Number of missing required test locations <sup>3</sup> :	4	0	4
Percentage of missing test locations for the facility <sup>4,5</sup> :	4%	0	4%

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)**

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

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

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

**Follow-Up Testing (if required)**

Required if –

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

Follow-up Testing:

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

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

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

**Attachment 1:**  
**Summary Data Tables**

**Table 1- Radon Testing Results****Herbert Hoover Middle School****Test Period: 01/22/2024 - 01/25/2024**

Kit Number	Room / Area	Result
11288403	1	WI
11635083	1	0.6
11634044	7	0.8
11288449	8	1.5
11634987	9	0.6
11634942	11	0.6
11288500	12	1.0
11288537	12	0.6
11634983	13	< 0.3
11634995	16	< 0.3
11634992	17	1.0
11634986	18	1.3
11634076	24	0.9
11634075	25	0.6
11634082	26	0.6
11634081	27	< 0.3
11634086	28	0.6
11634080	29	1.1
11634074	30	< 0.3
11634073	31	0.7
11288454	33	0.9
11634070	34	< 0.3
11634058	35	< 0.3
11634994	36	< 0.3
11635000	36	< 0.3
11634079	39	< 0.3
11634999	39	< 0.3
11634943	40	< 0.3
11634078	41	< 0.3
11634057	45	N/A
11635077	101	0.8
11635076	102	1.0
11635069	103	1.0
11635070	104	1.6
11635082	105	1.2
11635062	106	1.0
11288477	107	< 0.3
11288432	110	0.8

<b>Table 1- Radon Testing Results</b>		
<b>Herbert Hoover Middle School</b>		
<b>Test Period: 01/22/2024 - 01/25/2024</b>		
11288481	114	1.1
11288483	115	0.9
11288480	119	1.4
11288494	121	1.0
11635089	124	0.8
11288433	124	1.0
11288463	125	0.6
11635054	126	0.5
11288457	127	0.6
11635061	128	0.6
11288496	131	1.1
11635095	131	0.7
11635090	132	0.9
11288482	135	< 0.3
11288476	136	WI
11288479	138	1.4
11635039	144	0.5
11288495	145	0.8
11288489	146	0.5
11288484	148	0.7
11635088	148	0.8
11635087	149	< 0.3
11288498	153	0.8
11635063	154	0.7
11635093	155	< 0.3
11288485	167	1.4
11288499	168	1.0
11635086	170	0.7
11634982	173	< 0.3
11635037	174	< 0.3
11288488	175	< 0.3
11288493	175	N/A
11288490	176	0.5
11288497	178	0.9
11288465	180	0.6
11288493	180	0.6
11635091	182	< 0.3
11288458	183	0.5
11288475	185	0.7
11288472	188	0.6



<b>Table 1- Radon Testing Results</b>		
<b>Herbert Hoover Middle School</b>		
<b>Test Period: 01/22/2024 - 01/25/2024</b>		
11288455	189	0.8
11288464	191	< 0.3
11288470	194	0.5
11288492	195	0.8
11288474	199	< 0.3
11634087	211	0.6
11634094	211	< 0.3
11634089	218	0.9
11634065	044A	< 0.3
11634057	045A	1.0
11288486	100 MAIN OFFICE	1.1
11635045	114A	1.1
11635053	138A	0.5
11288487	138B	1.0
11288478	170A	0.7
11288456	177A	0.6
11635064	177B	0.6
11634981	180A	WI
11635079	180A	< 0.3
11634965	194B	0.6
11635085	199A	0.6
11288473	199B	0.7
11288471	CAFETERIA	0.8
11288491	CAFETERIA	< 0.3
11634066	GYM	0.7
11634949	TEAM ROOM	1.2
11477892	1	< 0.3
11477897	1	< 0.3
11477877	136	< 0.3
11477898	136	< 0.3
11477891	180	< 0.3
11477894	180	< 0.3



<b>Table 3 - QC Radon Testing Results</b>			
<b>Herbert Hoover Middle School</b>			
<b>Test Period: 01/22/2024 - 01/25/2024</b>			
<b>Kit Number</b>	<b>QC Type</b>	<b>Room / Area</b>	<b>Result</b>
11288403	FB	1	WI
11288537	D	12	0.6
11635000	D	36	< 0.3
11634079	D	39	< 0.3
11288433	D	124	1
11288496	D	131	1.1
11288476	FB	136	WI
11635088	D	148	0.8
11288465	D	180	0.6
11288493	D	180	0.6
11634094	D	211	< 0.3
11634981	FB	180A	WI
11288471	D	Cafeteria	0.8
11463686	OB	OFFICE BLANK	< 0.3
11463685	TB	TRAVEL BLANK	< 0.3



**Attachment 2:**  
**Laboratory Reports**

Radon test result report for:  
**HERBERT HOOVER MS  
 SCHOOL**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11288403	001	2024-01-22 @ 2:00 pm	2024-01-25 @ 10:00 am	???? WI	2024-01-29
11635083	001	2024-01-22 @ 4:00 pm	2024-01-25 @ 10:00 am	0.6 ± 0.3	2024-01-29
11634044	007	2024-01-22 @ 2:00 pm	2024-01-25 @ 10:00 am	0.8 ± 0.3	2024-01-29
11288449	008	2024-01-22 @ 2:00 pm	2024-01-25 @ 10:00 am	1.5 ± 0.4	2024-01-29
11634987	009	2024-01-22 @ 2:00 pm	2024-01-25 @ 10:00 am	0.6 ± 0.3	2024-01-29
11634942	011	2024-01-22 @ 2:00 pm	2024-01-25 @ 10:00 am	0.6 ± 0.3	2024-01-29
11288500	012	2024-01-22 @ 2:00 pm	2024-01-25 @ 10:00 am	1.0 ± 0.3	2024-01-29
11288537	012	2024-01-22 @ 2:00 pm	2024-01-25 @ 10:00 am	0.6 ± 0.3	2024-01-29
11634983	013	2024-01-22 @ 2:00 pm	2024-01-25 @ 10:00 am	< 0.3	2024-01-29
11634995	016	2024-01-22 @ 2:00 pm	2024-01-25 @ 10:00 am	< 0.3	2024-01-29
11634992	017	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	1.0 ± 0.3	2024-01-29
11634986	018	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	1.3 ± 0.3	2024-01-29
11634076	024	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	0.9 ± 0.3	2024-01-29
11634075	025	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	0.6 ± 0.3	2024-01-29
11634082	026	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	0.6 ± 0.3	2024-01-29
11634081	027	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	< 0.3	2024-01-29
11634086	028	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	0.6 ± 0.3	2024-01-29
11634080	029	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	1.1 ± 0.3	2024-01-29
11634074	030	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	< 0.3	2024-01-29
11634073	031	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	0.7 ± 0.3	2024-01-29
11288454	033	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	0.9 ± 0.3	2024-01-29
11634070	034	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	< 0.3	2024-01-29
11634058	035	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	< 0.3	2024-01-29
11634994	036	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	< 0.3	2024-01-29
11635000	036	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	< 0.3	2024-01-29
11634999	039	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	< 0.3	2024-01-29
11634079	039	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	< 0.3	2024-01-29
11634943	040	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	< 0.3	2024-01-29
11634078	041	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	< 0.3	2024-01-29
11634065	044A	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	< 0.3	2024-01-29
11634057	045A	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	1.0 ± 0.3	2024-01-29
11288486	100 MAIN OFFICE	2024-01-22 @ 9:00 am	2024-01-25 @ 8:00 am	1.1 ± 0.4	2024-01-29
11635077	101	2024-01-22 @ 9:00 am	2024-01-25 @ 8:00 am	0.8 ± 0.3	2024-01-29
11635076	102	2024-01-22 @ 9:00 am	2024-01-25 @ 8:00 am	1.0 ± 0.3	2024-01-29
11635069	103	2024-01-22 @ 9:00 am	2024-01-25 @ 8:00 am	1.0 ± 0.3	2024-01-29
11635070	104	2024-01-22 @ 9:00 am	2024-01-25 @ 8:00 am	1.6 ± 0.4	2024-01-29
11635082	105	2024-01-22 @ 10:00 am	2024-01-25 @ 8:00 am	1.2 ± 0.4	2024-01-29

Radon test result report for:  
**HERBERT HOOVER MS  
 SCHOOL**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11635062	106	2024-01-22 @ 10:00 am	2024-01-25 @ 8:00 am	1.0 ± 0.3	2024-01-29
11288477	107	2024-01-22 @ 10:00 am	2024-01-25 @ 8:00 am	< 0.3	2024-01-29
11288432	110	2024-01-22 @ 9:00 am	2024-01-25 @ 8:00 am	0.8 ± 0.4	2024-01-29
11288481	114	2024-01-22 @ 10:00 am	2024-01-25 @ 8:00 am	1.1 ± 0.3	2024-01-29
11635045	114A	2024-01-22 @ 11:00 am	2024-01-25 @ 8:00 am	1.1 ± 0.4	2024-01-29
11288483	115	2024-01-22 @ 11:00 am	2024-01-25 @ 8:00 am	0.9 ± 0.3	2024-01-29
11288480	119	2024-01-22 @ 12:00 pm	2024-01-25 @ 8:00 am	1.4 ± 0.4	2024-01-29
11288494	121	2024-01-22 @ 12:00 pm	2024-01-25 @ 8:00 am	1.0 ± 0.3	2024-01-29
11635089	124	2024-01-22 @ 10:00 am	2024-01-25 @ 8:00 am	0.8 ± 0.3	2024-01-29
11288433	124 (DUPLICATE)	2024-01-22 @ 10:00 am	2024-01-25 @ 8:00 am	1.0 ± 0.4	2024-01-29
11288463	125	2024-01-22 @ 2:00 pm	2024-01-25 @ 8:00 am	0.6 ± 0.3	2024-01-29
11635054	126	2024-01-22 @ 10:00 am	2024-01-25 @ 8:00 am	0.5 ± 0.3	2024-01-29
11288457	127	2024-01-22 @ 10:00 am	2024-01-25 @ 8:00 am	0.6 ± 0.3	2024-01-29
11635061	128	2024-01-22 @ 10:00 am	2024-01-25 @ 8:00 am	0.6 ± 0.3	2024-01-29
11635095	131	2024-01-22 @ 11:00 am	2024-01-25 @ 8:00 am	0.7 ± 0.3	2024-01-29
11288496	131	2024-01-22 @ 11:00 am	2024-01-25 @ 8:00 am	1.1 ± 0.4	2024-01-29
11635090	132	2024-01-22 @ 10:00 am	2024-01-25 @ 8:00 am	0.9 ± 0.3	2024-01-29
11288482	135	2024-01-22 @ 11:00 am	2024-01-25 @ 8:00 am	< 0.3	2024-01-29
11288476	136	2024-01-22 @ 11:00 am	2024-01-25 @ 8:00 am	???? WI	2024-01-29
11288479	138	2024-01-22 @ 11:00 am	2024-01-25 @ 9:00 am	1.4 ± 0.4	2024-01-29
11635053	138A	2024-01-22 @ 11:00 am	2024-01-25 @ 9:00 am	0.5 ± 0.3	2024-01-29
11288487	138B	2024-01-22 @ 11:00 am	2024-01-25 @ 9:00 am	1.0 ± 0.3	2024-01-29
11635039	144	2024-01-22 @ 12:00 pm	2024-01-25 @ 9:00 am	0.5 ± 0.3	2024-01-29
11288495	145	2024-01-22 @ 12:00 pm	2024-01-25 @ 9:00 am	0.8 ± 0.3	2024-01-29
11288489	146	2024-01-22 @ 12:00 pm	2024-01-25 @ 9:00 am	0.5 ± 0.3	2024-01-29
11288484	148	2024-01-22 @ 12:00 pm	2024-01-25 @ 9:00 am	0.7 ± 0.3	2024-01-29
11635088	148	2024-01-22 @ 12:00 pm	2024-01-25 @ 9:00 am	0.8 ± 0.3	2024-01-29
11635087	149	2024-01-22 @ 12:00 pm	2024-01-25 @ 9:00 am	< 0.3	2024-01-29
11288498	153	2024-01-22 @ 12:00 pm	2024-01-25 @ 9:00 am	0.8 ± 0.3	2024-01-29
11635063	154	2024-01-22 @ 12:00 pm	2024-01-25 @ 9:00 am	0.7 ± 0.3	2024-01-29
11635093	155	2024-01-22 @ 12:00 pm	2024-01-25 @ 9:00 am	< 0.3	2024-01-29
11288485	167	2024-01-22 @ 2:00 pm	2024-01-25 @ 9:00 am	1.4 ± 0.3	2024-01-29
11288499	168	2024-01-22 @ 2:00 pm	2024-01-25 @ 9:00 am	1.0 ± 0.3	2024-01-29
11635086	170	2024-01-22 @ 12:00 pm	2024-01-25 @ 9:00 am	0.7 ± 0.3	2024-01-29
11288478	170A	2024-01-22 @ 12:00 pm	2024-01-25 @ 9:00 am	0.7 ± 0.3	2024-01-29
11634982	173	2024-01-22 @ 12:00 pm	2024-01-25 @ 9:00 am	< 0.3	2024-01-29
11635037	174	2024-01-22 @ 1:00 pm	2024-01-25 @ 9:00 am	< 0.3	2024-01-29

Radon test result report for:  
**HERBERT HOOVER MS  
 SCHOOL**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11288488	175	2024-01-22 @ 12:00 pm	2024-01-25 @ 9:00 am	< 0.3	2024-01-29
11288490	176	2024-01-22 @ 1:00 pm	2024-01-25 @ 9:00 am	0.5 ± 0.3	2024-01-29
11288456	177A	2024-01-22 @ 2:00 pm	2024-01-25 @ 9:00 am	0.6 ± 0.3	2024-01-29
11635064	177B	2024-01-22 @ 12:00 pm	2024-01-25 @ 9:00 am	0.6 ± 0.3	2024-01-29
11288497	178	2024-01-22 @ 1:00 pm	2024-01-25 @ 9:00 am	0.9 ± 0.3	2024-01-29
11288465	180	2024-01-22 @ 1:00 pm	2024-01-25 @ 9:00 am	0.6 ± 0.3	2024-01-29
11288493	180	2024-01-22 @ 1:00 pm	2024-01-25 @ 9:00 am	0.6 ± 0.3	2024-01-29
11634981	180A	2024-01-22 @ 1:00 pm	2024-01-25 @ 9:00 am	???? WI	2024-01-29
11635079	180A	2024-01-22 @ 4:00 pm	2024-01-25 @ 9:00 am	< 0.3	2024-01-29
11635091	182	2024-01-22 @ 1:00 pm	2024-01-25 @ 9:00 am	< 0.3	2024-01-29
11288458	183	2024-01-22 @ 2:00 pm	2024-01-25 @ 9:00 am	0.5 ± 0.3	2024-01-29
11288475	185	2024-01-22 @ 1:00 pm	2024-01-25 @ 9:00 am	0.7 ± 0.3	2024-01-29
11288472	188	2024-01-22 @ 1:00 pm	2024-01-25 @ 9:00 am	0.6 ± 0.3	2024-01-29
11288455	189	2024-01-22 @ 1:00 pm	2024-01-25 @ 9:00 am	0.8 ± 0.4	2024-01-29
11288464	191	2024-01-22 @ 1:00 pm	2024-01-25 @ 9:00 am	< 0.3	2024-01-29
11288470	194	2024-01-22 @ 2:00 pm	2024-01-25 @ 9:00 am	0.5 ± 0.3	2024-01-29
11634965	194B	2024-01-22 @ 2:00 pm	2024-01-25 @ 9:00 am	0.6 ± 0.3	2024-01-29
11288492	195	2024-01-22 @ 2:00 pm	2024-01-25 @ 9:00 am	0.8 ± 0.3	2024-01-29
11288474	199	2024-01-22 @ 1:00 pm	2024-01-25 @ 9:00 am	< 0.3	2024-01-29
11635085	199A	2024-01-22 @ 1:00 pm	2024-01-25 @ 9:00 am	0.6 ± 0.3	2024-01-29
11288473	199B	2024-01-22 @ 1:00 pm	2024-01-25 @ 9:00 am	0.7 ± 0.3	2024-01-29
11634094	211	2024-01-22 @ 4:00 pm	2024-01-25 @ 10:00 am	< 0.3	2024-01-29
11634087	211	2024-01-22 @ 4:00 pm	2024-01-25 @ 10:00 am	0.6 ± 0.3	2024-01-29
11634089	218	2024-01-22 @ 4:00 pm	2024-01-25 @ 10:00 am	0.9 ± 0.3	2024-01-29
11288491	CAFETERIA	2024-01-22 @ 1:00 pm	2024-01-25 @ 9:00 am	< 0.3	2024-01-29
11288471	CAFETERIA	2024-01-22 @ 1:00 pm	2024-01-25 @ 9:00 am	0.8 ± 0.3	2024-01-29
11634066	GYM	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	0.7 ± 0.3	2024-01-29
11634949	TEAM ROOM	2024-01-22 @ 3:00 pm	2024-01-25 @ 10:00 am	1.2 ± 0.3	2024-01-29



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January 30, 2024

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

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Radon test result report for:  
**HERBERT HOOVER MS  
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>
11463733	183	2024-01-23 @ 8:00 am	2024-01-26 @ 12:00 pm	0.9 ± 0.3	2024-01-30

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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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January 29, 2024

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

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Radon test result report for:  
**HERBERT HOOVER MS**  
**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>
11635075	136	2024-01-22 @ 11:00 am	2024-01-25 @ 8:00 am	0.8 ± 0.3	2024-01-29

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February 27, 2024

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

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Radon test result report for:

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
11477892	001	2024-02-20 @ 12:00 pm	2024-02-23 @ 10:00 am	< 0.3	2024-02-27
11477897	001	2024-02-20 @ 12:00 pm	2024-02-23 @ 10:00 am	< 0.3	2024-02-27
11477877	136	2024-02-20 @ 11:00 am	2024-02-23 @ 10:00 am	< 0.3	2024-02-27
11477898	136	2024-02-20 @ 11:00 am	2024-02-23 @ 10:00 am	< 0.3	2024-02-27
11477891	180	2024-02-20 @ 12:00 pm	2024-02-23 @ 10:00 am	< 0.3	2024-02-27
11477894	180	2024-02-20 @ 12:00 pm	2024-02-23 @ 10:00 am	< 0.3	2024-02-27

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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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January 30, 2024

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

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Radon test result report for:

**KCI  
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>
11463691	OB	2024-01-23 @ 8:00 am	2024-01-26 @ 2:00 pm	< 0.3	2024-01-30
11463647	TB	2024-01-23 @ 8:00 am	2024-01-26 @ 2:00 pm	< 0.3	2024-01-30

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January 29, 2024

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

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Radon test result report for:  
**STORAGE**  
**KCI**

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

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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 213327

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

Date Start: 1/19/24 Date Stop: 1/22/24 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0831 Time Stop: 0831 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

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

11284003, 11284005, 11284006

11284007, 11284008, 11284013

F3 Left

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

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

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

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

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

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

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

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January 29, 2024

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

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Radon test result report for:  
**BOWSER MORNER  
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>
11284003	SK	2024-01-19 @ 9:00 am	2024-01-22 @ 9:00 am	47.0 ± 3.8	2024-01-29
11284005	SK	2024-01-19 @ 9:00 am	2024-01-22 @ 9:00 am	43.4 ± 3.5	2024-01-29
11284006	SK	2024-01-19 @ 9:00 am	2024-01-22 @ 9:00 am	42.1 ± 3.4	2024-01-29
11284007	SK	2024-01-19 @ 9:00 am	2024-01-22 @ 9:00 am	46.4 ± 3.7	2024-01-29
11284008	SK	2024-01-19 @ 9:00 am	2024-01-22 @ 9:00 am	46.2 ± 3.7	2024-01-29
11284013	SK	2024-01-19 @ 9:00 am	2024-01-22 @ 9:00 am	45.6 ± 3.6	2024-01-29

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



### Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Testing January 22<sup>nd</sup> to January 25<sup>th</sup>

Name of Schools:

1. Fields Road ES
2. Germantown ES
3. Highland View ES
4. Westbrook ES
5. John T. Baker MS
6. Herbert Hoover MS

---

	Date	Initials
Radon Test Kits Deployed	01/22/2024	BMM
Radon Test Kits Collected	01/25/2024	BMM
Radon Test Kits Shipped to Lab*	01/25/2024	BMM
Radon Test Kits Received by Lab*	01/29/2024	BMM

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



**Attachment 3:**  
**Sampling Location Map**



**MCPS RADON TESTING – EXECUTIVE SUMMARY**

Site Name	Herbert Hoover Middle School
Date of Test Report	4/6/2022
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	97
# Rooms $\geq$ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.2 pCi/L

Project Status:

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



April 6, 2022

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

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

Location: Herbert Hoover MS  
8810 Post oak Rd.  
Potomac, MD 20854

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 Herbert Hoover MS, located at 8810 Post oak Rd. Potomac, MD 20854 (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 February 8, 2022 and deployed one hundred and twelve (112) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

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

KCI returned to the site on February 11, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc.

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

**Evaluation of Testing Conditions:**

These tests represent:

- Follow-up to post-mitigation biennial testing.

These tests were conducted to:

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

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the 30s and high temperatures ranged from the mid 30s to the mid 50s Fahrenheit. Maximum sustained winds ranged from 3-12 miles per hour. Average humidity was around 23% with 0.1 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		
Herbert Hoover MS		
Test Period: 02/8/2022 - 02/11/2022		
Kit Number	Room / Area	Result
11114604	1	< 0.3
11114603	7	< 0.3
11114628	7	< 0.3
11114618	8	< 0.3
11114607	9	< 0.3
11114613	11	< 0.3
11114609	12	< 0.3
11114614	13	< 0.3
11114620	16	< 0.3
11114617	18	< 0.3
11114626	18	1.2
11114627	18	0.8
11114633	24	0.5
11114637	24	0.7
11114638	24	< 0.3
11114623	25	0.7
11114608	26	0.6
11114632	27	0.7
11114622	28	0.5
11114615	29	0.5
11114636	30	0.5
11114616	31	< 0.3
11114624	33	< 0.3
11114629	34	0.7
11114601	35	< 0.3
11115296	35	< 0.3
11114605	36	< 0.3
11114619	39	< 0.3
11114621	40	< 0.3
11114625	41	0.5
11115292	100	0.7
11115278	101	0.5
11115285	102	< 0.3
11114635	103	0.8
11115273	105	< 0.3
11115268	106	< 0.3
11115267	107	< 0.3
11115276	110	< 0.3
11115291	110	< 0.3
11115284	114	0.5
11115290	115	0.7
11115289	119	0.8

Table 1- Radon Testing Results		
Herbert Hoover MS		
Test Period: 02/8/2022 - 02/11/2022		
Kit Number	Room / Area	Result
11115265	125	0.6
11114634	126	0.7
11115254	127	< 0.3
11115269	128	< 0.3
11115239	131	0.6
11115262	131	< 0.3
11115231	132	< 0.3
11114630	135	< 0.3
11115277	136	< 0.3
11115264	138	0.5
11115271	138	< 0.3
11115248	139	< 0.3
11115270	144	< 0.3
11115275	144	< 0.3
11115281	144	< 0.3
11115274	145	< 0.3
11115260	146	< 0.3
11115258	148	< 0.3
11115257	149	< 0.3
11114631	153	< 0.3
11115252	154	< 0.3
11115253	155	< 0.3
11115243	161	< 0.3
11115261	161	0.5
11115263	161	NA
11115247	162	< 0.3
11115240	163	0.6
11115266	164	< 0.3
11115255	165	1.0
11115259	166	< 0.3
11115283	167	< 0.3
11115282	168	0.6
11115244	170	< 0.3
11115249	173	< 0.3
11115251	174	< 0.3
11115246	175	< 0.3
11115250	175	< 0.3
11115245	176	< 0.3
11115223	178	< 0.3
11115238	180	< 0.3
11115207	182	< 0.3
11115295	183	< 0.3

Table 1- Radon Testing Results		
Herbert Hoover MS		
Test Period: 02/8/2022 - 02/11/2022		
Kit Number	Room / Area	Result
11115242	185	< 0.3
11115241	188	0.7
11115279	189	< 0.3
11115286	191	0.6
11115287	193	< 0.3
11115298	194	0.6
11115294	195	0.9
11115215	199	< 0.3
11114645	205	< 0.3
11114641	213	< 0.3
11114639	218	< 0.3
11114642	218	< 0.3
11114643	218	< 0.3
11114611	045A	< 0.3
11114606	046 GYM	< 0.3
11114612	046 GYM	< 0.3
11115272	138A	< 0.3
11115256	138B	< 0.3
11115216	177A	< 0.3
11115232	177B	< 0.3
11115293	192 CAFETERIA	0.6
11115300	192 CAFETERIA	< 0.3
11115288	194B	< 0.3
11115297	194B	0.8
11115299	194B	< 0.3
11115280	196B	< 0.3
11115208	199A	< 0.3
11114610	44A	0.7

Table 2- Radon Testing Results			
Herbert Hoover MS			
Test Period: 02/8/2022 - 02/11/2022			
Kit Number	QC Type	Room / Area	Result
11115250	D	175	< 0.3
11115262	D	131	< 0.3
11115275	D	144	< 0.3
11115281	FB	144	< 0.3
11115291	D	110	< 0.3
11115297	D	194B	0.8
11115299	FB	194B	< 0.3
11114601	D	35	< 0.3
11114626	D	18	1.2
11114628	D	7	< 0.3
11114637	D	24	0.7
11114638	FB	24	< 0.3
11114639	D	218	< 0.3
11114643	FB	218	< 0.3
11113478	OB	OFFICE BLANK	< 0.3
11113477	TB	TRAVEL BLANK	< 0.3



# ATTACHMENT C

## Laboratory Analytical Results

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11114604	001	2022-02-08 @ 2:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114603	007	2022-02-08 @ 2:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114628	007	2022-02-08 @ 2:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114618	008	2022-02-08 @ 1:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114607	009	2022-02-08 @ 1:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114613	011	2022-02-08 @ 1:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114609	012	2022-02-08 @ 1:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114614	013	2022-02-08 @ 1:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114620	016	2022-02-08 @ 1:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114626	018	2022-02-08 @ 1:00 pm	2022-02-11 @ 10:00 am	1.2 ± 0.3	2022-02-14
11114627	018	2022-02-08 @ 1:00 pm	2022-02-11 @ 10:00 am	0.8 ± 0.3	2022-02-14
11114617	018	2022-02-08 @ 1:00 pm	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11114637	024	2022-02-08 @ 2:00 pm	2022-02-11 @ 11:00 am	0.7 ± 0.3	2022-02-14
11114638	024	2022-02-08 @ 2:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114633	024	2022-02-08 @ 2:00 pm	2022-02-11 @ 11:00 am	0.5 ± 0.3	2022-02-14
11114623	025	2022-02-08 @ 2:00 pm	2022-02-11 @ 11:00 am	0.7 ± 0.3	2022-02-14
11114608	026	2022-02-08 @ 2:00 pm	2022-02-11 @ 11:00 am	0.6 ± 0.3	2022-02-14
11114632	027	2022-02-08 @ 2:00 pm	2022-02-11 @ 11:00 am	0.7 ± 0.3	2022-02-14
11114622	028	2022-02-08 @ 2:00 pm	2022-02-11 @ 11:00 am	0.5 ± 0.3	2022-02-14
11114615	029	2022-02-08 @ 2:00 pm	2022-02-11 @ 11:00 am	0.5 ± 0.3	2022-02-14
11114636	030	2022-02-08 @ 2:00 pm	2022-02-11 @ 11:00 am	0.5 ± 0.3	2022-02-14
11114616	031	2022-02-08 @ 2:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114624	033	2022-02-08 @ 2:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114629	034	2022-02-08 @ 2:00 pm	2022-02-11 @ 11:00 am	0.7 ± 0.3	2022-02-14
11115296	035	2022-02-08 @ 1:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114601	035	2022-02-08 @ 1:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114605	036	2022-02-08 @ 1:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114619	039	2022-02-08 @ 1:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114621	040	2022-02-08 @ 1:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114625	041	2022-02-08 @ 1:00 pm	2022-02-11 @ 11:00 am	0.5 ± 0.3	2022-02-14
11114611	045A	2022-02-08 @ 1:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114606	046 GYM	2022-02-08 @ 1:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114612	046 GYM	2022-02-08 @ 1:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11115292	100	2022-02-08 @ 11:00 am	2022-02-11 @ 9:00 am	0.7 ± 0.3	2022-02-15
11115278	101	2022-02-08 @ 11:00 am	2022-02-11 @ 9:00 am	0.5 ± 0.3	2022-02-14
11115285	102	2022-02-08 @ 11:00 am	2022-02-11 @ 9:00 am	< 0.3	2022-02-15
11114635	103	2022-02-08 @ 2:00 pm	2022-02-11 @ 9:00 am	0.8 ± 0.3	2022-02-15

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11115273	105	2022-02-08 @ 11:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115268	106	2022-02-08 @ 11:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115267	107	2022-02-08 @ 11:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115276	110	2022-02-08 @ 11:00 am	2022-02-11 @ 9:00 am	< 0.3	2022-02-14
11115291	110	2022-02-08 @ 11:00 am	2022-02-11 @ 9:00 am	< 0.3	2022-02-14
11115284	114	2022-02-08 @ 11:00 am	2022-02-11 @ 9:00 am	0.5 ± 0.3	2022-02-15
11115290	115	2022-02-08 @ 11:00 am	2022-02-11 @ 10:00 am	0.7 ± 0.3	2022-02-14
11115289	119	2022-02-08 @ 11:00 am	2022-02-11 @ 10:00 am	0.8 ± 0.3	2022-02-14
11115265	125	2022-02-08 @ 11:00 am	2022-02-11 @ 11:00 am	0.6 ± 0.3	2022-02-14
11114634	126	2022-02-08 @ 2:00 pm	2022-02-11 @ 10:00 am	0.7 ± 0.3	2022-02-15
11115254	127	2022-02-08 @ 10:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115269	128	2022-02-08 @ 11:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115239	131	2022-02-08 @ 10:00 am	2022-02-11 @ 10:00 am	0.6 ± 0.3	2022-02-14
11115262	131	2022-02-08 @ 10:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115231	132	2022-02-08 @ 10:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11114630	135	2022-02-08 @ 3:00 pm	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115277	136	2022-02-08 @ 11:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115271	138	2022-02-08 @ 12:00 pm	2022-02-11 @ 9:00 am	< 0.3	2022-02-14
11115264	138	2022-02-08 @ 12:00 pm	2022-02-11 @ 9:00 am	0.5 ± 0.3	2022-02-14
11115272	138A	2022-02-08 @ 12:00 pm	2022-02-11 @ 9:00 am	< 0.3	2022-02-14
11115256	138B	2022-02-08 @ 12:00 pm	2022-02-11 @ 9:00 am	< 0.3	2022-02-14
11115248	139	2022-02-08 @ 10:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115281	144	2022-02-08 @ 11:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115270	144	2022-02-08 @ 11:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115275	144	2022-02-08 @ 11:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115274	145	2022-02-08 @ 11:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115260	146	2022-02-08 @ 10:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115258	148	2022-02-08 @ 10:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115257	149	2022-02-08 @ 10:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11114631	153	2022-02-08 @ 3:00 pm	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115252	154	2022-02-08 @ 10:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115253	155	2022-02-08 @ 10:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115261	161	2022-02-08 @ 10:00 am	2022-02-11 @ 10:00 am	0.5 ± 0.3	2022-02-14
11115243	161	2022-02-08 @ 10:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115263	161	2022-02-08 @ 10:00 am	2022-02-11 @ 10:00 am	???? IF1	2022-02-15
11115247	162	2022-02-08 @ 10:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115240	163	2022-02-08 @ 10:00 am	2022-02-11 @ 10:00 am	0.6 ± 0.3	2022-02-14



Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11115266	164	2022-02-08 @ 10:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115255	165	2022-02-08 @ 10:00 am	2022-02-11 @ 10:00 am	1.0 ± 0.3	2022-02-14
11115259	166	2022-02-08 @ 10:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115283	167	2022-02-08 @ 11:00 am	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115282	168	2022-02-08 @ 11:00 am	2022-02-11 @ 10:00 am	0.6 ± 0.3	2022-02-14
11115244	170	2022-02-08 @ 10:00 am	2022-02-11 @ 9:00 am	< 0.3	2022-02-15
11115249	173	2022-02-08 @ 10:00 am	2022-02-11 @ 9:00 am	< 0.3	2022-02-14
11115251	174	2022-02-08 @ 9:00 am	2022-02-11 @ 9:00 am	< 0.3	2022-02-15
11115250	175	2022-02-08 @ 9:00 am	2022-02-11 @ 9:00 am	< 0.3	2022-02-14
11115246	175	2022-02-08 @ 9:00 am	2022-02-11 @ 9:00 am	< 0.3	2022-02-15
11115245	176	2022-02-08 @ 10:00 am	2022-02-11 @ 9:00 am	< 0.3	2022-02-15
11115216	177A	2022-02-08 @ 9:00 am	2022-02-11 @ 9:00 am	< 0.3	2022-02-15
11115232	177B	2022-02-08 @ 10:00 am	2022-02-11 @ 9:00 am	< 0.3	2022-02-15
11115223	178	2022-02-08 @ 9:00 am	2022-02-11 @ 9:00 am	< 0.3	2022-02-15
11115238	180	2022-02-08 @ 9:00 am	2022-02-11 @ 9:00 am	< 0.3	2022-02-15
11115207	182	2022-02-08 @ 9:00 am	2022-02-11 @ 9:00 am	< 0.3	2022-02-15
11115295	183	2022-02-08 @ 12:00 pm	2022-02-11 @ 9:00 am	< 0.3	2022-02-15
11115242	185	2022-02-08 @ 9:00 am	2022-02-11 @ 9:00 am	< 0.3	2022-02-15
11115241	188	2022-02-08 @ 9:00 am	2022-02-11 @ 9:00 am	0.7 ± 0.3	2022-02-15
11115279	189	2022-02-08 @ 12:00 pm	2022-02-11 @ 9:00 am	< 0.3	2022-02-14
11115286	191	2022-02-08 @ 12:00 pm	2022-02-11 @ 10:00 am	0.6 ± 0.3	2022-02-14
11115293	192 CAFETERIA	2022-02-08 @ 12:00 pm	2022-02-11 @ 9:00 am	0.6 ± 0.3	2022-02-14
11115300	192 CAFETERIA	2022-02-08 @ 12:00 pm	2022-02-11 @ 9:00 am	< 0.3	2022-02-15
11115287	193	2022-02-08 @ 12:00 pm	2022-02-11 @ 9:00 am	< 0.3	2022-02-14
11115298	194	2022-02-08 @ 12:00 pm	2022-02-11 @ 9:00 am	0.6 ± 0.3	2022-02-14
11115299	194B	2022-02-08 @ 12:00 pm	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115288	194B	2022-02-08 @ 12:00 pm	2022-02-11 @ 10:00 am	< 0.3	2022-02-14
11115297	194B	2022-02-08 @ 12:00 pm	2022-02-11 @ 10:00 am	0.8 ± 0.3	2022-02-14
11115294	195	2022-02-08 @ 12:00 pm	2022-02-11 @ 10:00 am	0.9 ± 0.3	2022-02-14
11115280	196B	2022-02-08 @ 12:00 pm	2022-02-11 @ 9:00 am	< 0.3	2022-02-14
11115215	199	2022-02-08 @ 9:00 am	2022-02-11 @ 9:00 am	< 0.3	2022-02-15
11115208	199A	2022-02-08 @ 9:00 am	2022-02-11 @ 9:00 am	< 0.3	2022-02-15
11114645	205	2022-02-08 @ 3:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114641	213	2022-02-08 @ 3:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114639	218	2022-02-08 @ 3:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114643	218	2022-02-08 @ 3:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14
11114642	218	2022-02-08 @ 3:00 pm	2022-02-11 @ 11:00 am	< 0.3	2022-02-14

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February 15, 2022

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

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Radon test result report for:

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
11114610	44A	2022-02-08 @ 1:00 pm	2022-02-11 @ 11:00 am	0.7 ± 0.3	2022-02-15

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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 204186

NOMINAL Conditions: Radon Conc 25.8 pCi/L Rel. Hum 50.1 % Temp. 70.9 F

Date Start: 2/18/22 Date Stop: 2/21/22 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0911 Time Stop: 0911 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: (3) Char Bags -  
11113484, 1112998, 20107126 Device No.'s: \_\_\_\_\_

23 Right

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

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

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

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

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

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

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

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

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Kit Number	Start Date	Start Time	End Date	End Time	Temp.	Facility	Building	Room	Project ID	Floor	Result
11113484	2022-02-18	9:00 am	2022-02-21	9:00 am	71	OFFICE	MAIN	SK1		1	27.9
11122998	2022-02-18	9:00 am	2022-02-21	9:00 am	71	OFFICE	MAIN	SK2		1	26.0
20107126	2022-02-18	9:00 am	2022-02-21	9:00 am	71	OFFICE	MAIN	SK3		1	27.6

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## Radon Test Kit Chain of Custody

Project Name: MCPS Radon – February 2022 Schools

Name of Schools:

1. Earle. B Wood MS
2. Flower Valley ES
3. Parkland MS
4. Herbert Hoover MS
5. Ritchie Park ES
6. Wayside ES
7. Potomac ES
8. Redland MS
9. Sequoyah ES
10. Sherwood ES
11. Rock Terrace School

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	Date	Initials
Radon Test Kits Deployed	02/08/2022	PM
Radon Test Kits Collected	02/11/2022	PM
Radon Test Kits Shipped to Lab*	02/11/2022	PM
Radon Test Kits Received by Lab*	02/15/2022	PM

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



**MCPS RADON TESTING – EXECUTIVE SUMMARY**

Site Name	Herbert Hoover Middle School
Date of Test Report	05/12/2022
Round of Testing	Initial <u>Follow-up</u> Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	3
# Rooms $\geq$ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	0.7 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: Herbert Hoover Middle School  
8810 Postoak Rd.  
Potomac, MD 20854

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 Herbert Hoover Middle School, located at 8810 Postoak Rd. Potomac, MD 20854 (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 22, 2022 and deployed five (5) 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 25, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

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

These tests represent:

- Follow-up to 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 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		
Herbert Hoover MS RT		
Test Period: 03/22/2022 - 03/25/2022		
Kit Number	Room / Area	Result
11139069	32	0.6
11139090	124	< 0.3
11138954	161	< 0.3
11138960	161	0.7
11139089	161	< 0.3

Table 2- Radon Testing Results			
Herbert Hoover MS RT			
Test Period: 03/22/2022 - 03/25/2022			
Kit Number	QC Type	Room / Area	Result
11138960	D	161	< 0.3
11139089	FB	161	< 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:

**HERBERT HOOVER MS RT  
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>
11139090	124	2022-03-22 @ 10:00 am	2022-03-25 @ 9:00 am	< 0.3	2022-03-28
11138954	161	2022-03-22 @ 10:00 am	2022-03-25 @ 9:00 am	< 0.3	2022-03-28
11138960	161	2022-03-22 @ 10:00 am	2022-03-25 @ 10:00 am	0.7 ± 0.3	2022-03-28
11139089	161	2022-03-22 @ 10:00 am	2022-03-25 @ 9:00 am	< 0.3	2022-03-28
11139069	32	2022-03-22 @ 10:00 am	2022-03-25 @ 9:00 am	0.6 ± 0.3	2022-03-28

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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 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).

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

---

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



## Radon Test Kit Chain of Custody

Project Name: MCPS Radon – March 2022 Schools – Retesting

Name of Schools:

1. Herbert Hoover MS
2. Parkland MS
3. Redland MS
4. Rock Creek Valley ES
5. Tilden MS
6. Rockville HS
7. Wootton HS
8. Capt. James E. Daly ES
9. Clarksburg HS
10. Clearspring ES
11. Hallie Wells MS
12. Northwest HS
13. Paint Branch HS
14. Rocky Hills MS
15. Seneca Valley HS
16. Sherwood HS
17. Wilson Wims ES

---

	Date	Initials
Radon Test Kits Deployed	03/22/2022	BMM
Radon Test Kits Collected	03/25/2022	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



## MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

**Executive Summary:**  
**Herbert Hoover Middle School**  
8810 Postoak Road,  
Potomac, MD 20854

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:	17
# of Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	<0.4
High Value:	0.7

### 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: Herbert Hoover Middle School  
8810 Postoak Road,  
Potomac, MD 20854

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 Herbert Hoover Middle School, located at 8810 Postoak Rd, Potomac, MD 20854 (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 26, 2019 and deployed seventeen (17) activated charcoal (AC) radon test kit. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on March 01, 2019 to retrieve the radon sampling test kit. A floor plan map of the building with the test location is included as Attachment A of this report.

PSI shipped all radon tests via overnight delivery to AccuStar Labs for analysis by gamma-ray spectroscopy. Accustar Labs is a NRSB certified analytical laboratory for radon analysis located at 929 Mount Zion Road, Lebanon, Pennsylvania (certification # ARLO007).

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

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

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



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

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

**Results:**

The results of the radon test analysis indicated the following:

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

Notes:  
D -Duplicate Sample

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

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

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





# **ATTACHMENT B**

Radon Test Summary Spreadsheet

<b>Radon Testing Results</b>		
<b>Herbert Hoover Middle School</b>		
<b>Testing period: 2/26/19 - 3/01/19</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result (pCi/L)</b>
3923497	002 Team Room	<0.4
3923492	8A	0.4
3923494	26	<0.4
3923495	26	<0.4
3923496	29	<0.4
3923353	100	<0.4
3923354	104	<0.4
3923352	113	<0.4
3923493	12A	<0.4
3923351	138	0.7
3923355	144	0.4
3923356	145A	<0.4
3923357	149A	<0.4
3923358	176	<0.4
3923359	182	<0.4
3923491	192	<0.4
3923360	195	<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

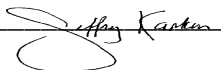
MCPS Radon Survey, Hoover Middle School  
8810 Postoak Rd  
Potomac MD 20854


Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
3220749	3923351	02/26/2019 11:26 am 03/01/2019 10:07 am	First Floor Room 138	0.7
3220750	3923352	02/26/2019 11:28 am 03/01/2019 10:05 am	First Floor Room 113	< 0.4
3220751	3923353	02/26/2019 11:30 am 03/01/2019 9:46 am	First Floor Room 100	< 0.4
3220752	3923354	02/26/2019 11:33 am 03/01/2019 9:47 am	First Floor Room 104	< 0.4
3220753	3923355	02/26/2019 11:37 am 03/01/2019 10:04 am	First Floor Room 144	0.4
3220754	3923356	02/26/2019 11:40 am 03/01/2019 10:03 am	First Floor Room 145A	< 0.4
3220755	3923357	02/26/2019 11:42 am 03/01/2019 10:05 am	First Floor Room 149A	< 0.4
3220756	3923358	02/26/2019 11:45 am 03/01/2019 9:58 am	First Floor Room 176	< 0.4
3220757	3923359	02/26/2019 11:52 am 03/01/2019 10:00 am	First Floor Room 182	< 0.4
3220758	3923360	02/26/2019 11:55 am 03/01/2019 10:09 am	First Floor Room 195	< 0.4
3220759	3923491	02/26/2019 11:59 am 03/01/2019 10:07 am	First Floor Room 192	< 0.4

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

Distributed by: Intertek-PSI (VA)

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

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

**Disclaimer:**

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.

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

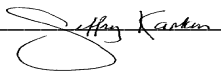
MCPS Radon Survey, Hoover Middle School  
8810 Postoak Rd  
Potomac MD 20854

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
3220760	3923492	02/26/2019 12:03 pm 03/01/2019 9:51 am	Floor LL Room 8A	0.4
3220761	3923493	02/26/2019 12:05 pm 03/01/2019 9:52 am	Floor LL Room 12A	< 0.4
3220762	3923494	02/26/2019 12:10 pm 03/01/2019 9:56 am	Floor LL Room 26	< 0.4
3220763	3923495	02/26/2019 12:10 pm 03/01/2019 9:56 am	Floor LL Room 26 Duplicate	< 0.4
3220764	3923496	02/26/2019 12:12 pm 03/01/2019 9:54 am	Floor LL Room 29	< 0.4
3220765	3923497	02/26/2019 12:20 pm 03/01/2019 9:50 am	Floor LL 002 Team Room	< 0.4

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

Distributed by: Intertek-PSI (VA)

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

Report Reviewed By: 

Report Approved By: 

**Disclaimer:**

The uncertainty of this radon measurement is +/- 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: Herbert Hoover Middle School

8810 Postoak Road,  
Potomac, MD 20854

Date of Test Report:	02/21/2019
Round of Testing:	Initial Follow-up Post Remediation <b>2 Year Testing</b> 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested:	102
# of Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	< 0.4
High Value:	3.3

### Project Status

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



February 21, 2019

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

Re: Radon Testing Services

Location: Herbert Hoover Middle School  
8810 Postoak Road,  
Potomac, MD 20854

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 Herbert Hoover Middle School, located at 8810 Postoak Rd, Potomac, MD 20854 (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 November 12, 2018 and deployed one hundred and eighteen (118) 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 November 15, 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	N/A
$\leq 4.0$ 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**

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

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

<b>Radon Testing Results</b>		
<b>Hoover Middle School</b>		
<b>Testing period: 11/12/18 - 11/15/18</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result (pCi/L)</b>
3916621	1	<0.4
3916612	7	1.4
3916634	8	<0.4
--	8A (MISSED)	--
3916641	9	<0.4
3916624	11	0.4
3916831	12	<0.4
--	12A (MISSED)	--
3916644	13	<0.4
3916631	16	<0.4
3916808	17	0.8
3916853	17	<0.4
3916639	18	0.8
3916827	24	0.7
3916777	25	0.5
3916772	26 (MISSING)	--
3916774	27	<0.4
3916625	28	0.4
3913828	29	Unable to Report
3916773	30	<0.4
3916771	31	<0.4
3916617	32	0.7
3916655	33	<0.4
3916614	34	<0.4
3916633	35	<0.4
3916889	36	<0.4
3881296	39	<0.4
3881278	40	<0.4
3881282	41	0.5
3916887	44	<0.4
3916885	44A	0.4
3916888	45	<0.4
3916890	45A	<0.4
3881298	46	0.4
3881297	46	0.9
--	100 (MISSED)	--
3916850	101	<0.4
3916844	101	<0.4
3916842	102	<0.4
3916841	103	1.0
--	104 (MISSED)	--
3916847	105	0.9
3916846	106	0.6

<b>Radon Testing Results</b>		
<b>Hoover Middle School</b>		
<b>Testing period: 11/12/18 - 11/15/18</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result (pCi/L)</b>
3916849	107	<0.4
3916843	110	<0.4
--	113 (INACCESSIBLE)	--
3916845	114	0.4
3916879	115	1.0
3916878	119	3.3
3916848	121	0.8
3916873	124	<0.4
3916871	125	<0.4
3916875	126	<0.4
3916866	127	0.7
3916867	128	<0.4
3916869	131	0.6
3916864	132	1.1
3916870	135	1.0
3916865	136	<0.4
3916876	138	<0.4
3916874	138	Unable to Report
3916872	138A	<0.4
3916877	138B	Unable to Report
3916868	139	<0.4
3916862	144 (MISSING)	--
3916961	145	<0.4
--	145A (MISSED)	--
3916781	146	<0.4
3916619	148	<0.4
3916783	149	<0.4
--	149A (MISSED)	--
3916618	153	<0.4
3916637	154	<0.4
3916790	155	<0.4
3916838	161	<0.4
3916620	162	0.5
3916784	163	<0.4
3916615	164	2.2
3916837	165	0.6
3916835	166	0.4
3916840	167	<0.4
3916785	168	0.6
3881286	170A	<0.4
3916856	173	<0.4
3916854	174	<0.4
3916851	175	0.8

<b>Radon Testing Results</b>		
<b>Hoover Middle School</b>		
<b>Testing period: 11/12/18 - 11/15/18</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result (pCi/L)</b>
3881299	176 (MISSING)	--
3916852	177A	<0.4
3916855	177B	<0.4
3916859	178	0.9
3916860	180	1.1
3913857	182	Unable to Report
3916786	183	1.3
3916636	185	<0.4
3916770	188	<0.4
3916635	189	0.7
3916769	189A	<0.4
3916788	191	<0.4
--	192 (MISSED)	--
3916836	193	<0.4
3916629	194 Office	<0.4
3913782	195	Unable to Report
3916833	195A	<0.4
3916628	195B	<0.4
3916623	196B	<0.4
3916834	196G	0.4
3916809	199	<0.4
3916616	199A	<0.4
3916638	199B	<0.4
3916627	204	0.4
3916630	221	<0.4
3916832	Cafeteria	<0.4
3916787	Cafeteria	<0.4
3916622	Kitchen	<0.4
3916626	Music Office	1.7
--	Team Room (INACCESSIBLE)	--

<b>Radon Testing Results</b>		
<b>Hoover Middle School</b>		
<b>Testing period: 11/12/18 - 11/15/18</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result (pCi/L)</b>
3916632	13 (D)	<0.4
3916775	26 (D) (MISSING)	--
3916776	34 (D)	<0.4
3916886	44A (D)	<0.4
3916880	115 (D)	0.6
3916863	128 (D)	<0.4
3916613	153 (D)	<0.4
3916839	161 (D)	<0.4
3916858	182 (D)	0.8
3916789	193 (D)	<0.4
3916611	Cafeteria (D)	<0.4
3918137	Field Blank	<0.4
3918133	Field Blank	<0.4
3916192	Office Blank	<0.4
3916280	Trip Blank	<0.4

**Table Notes:**

D – Duplicate

FB – Field Blank

OB – Office Blank

TB – Transit Blank

QC – Quality Control



# **ATTACHMENT C**

Laboratory Analytical Results

NELAC NY 11769  
NRPP 103216 AL  
NRSB ARL0017

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  
Hoover Middle School  
Potomac MD 20854

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2397699	3916850	11/12/2018 11:02 am	11/15/2018 8:40 am	Hoover Middle School First Floor Room 101	< 0.4
2397700	3916844	11/12/2018 11:04 am	11/15/2018 8:14 am	Hoover Middle School First Floor Room 101	< 0.4
2397701	3916842	11/12/2018 11:05 am	11/15/2018 8:42 am	Hoover Middle School First Floor Room 102	< 0.4
2397702	3916843	11/12/2018 11:05 am	11/15/2018 8:50 am	Hoover Middle School First Floor Room 110	< 0.4
2397703	3916841	11/12/2018 11:06 am	11/15/2018 8:45 am	Hoover Middle School First Floor Room 103	1.0
2397704	3916845	11/12/2018 11:07 am	11/15/2018 8:46 am	Hoover Middle School First Floor Room 114	0.4
2397705	3916847	11/12/2018 11:08 am	11/15/2018 8:43 am	Hoover Middle School First Floor Room 105	0.9
2397706	3916846	11/12/2018 11:08 am	11/15/2018 8:44 am	Hoover Middle School First Floor Room 106	0.6
2397707	3916849	11/12/2018 11:09 am	11/15/2018 8:53 am	Hoover Middle School First Floor Room 107	< 0.4
2397708	3916848	11/12/2018 11:12 am	11/15/2018 9:09 am	Hoover Middle School First Floor Room 121	0.8
2397709	3916879	11/12/2018 11:13 am	11/15/2018 9:09 am	Hoover Middle School First Floor Room 115	1.0

**Comment:** Unable to report a result for devices 3916877, 3916874, 3913857, 3913782 and 3913828 they were not analyzed. Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3916622 (Kitchen).

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018    Date Logged: 11/17/2018    Date Analyzed: 11/17/2018    Date Reported: 01/31/2019

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

**Disclaimer:**

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.

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NELAC NY 11769  
NRPP 103216 AL  
NRSB ARL0017

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  
Hoover Middle School  
Potomac MD 20854

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2397710	3916880	11/12/2018 11:12 am	11/15/2018 9:09 am	Hoover Middle School First Floor Room 115	0.6
2397711	3916878	11/12/2018 11:12 am	11/15/2018 9:06 am	Hoover Middle School First Floor Room 119	3.3
2397712	3916876	11/12/2018 11:15 am	11/15/2018 9:06 am	Hoover Middle School First Floor Room 138	< 0.4
2397714	3916873	11/12/2018 11:16 am	11/15/2018 8:54 am	Hoover Middle School First Floor Room 124	< 0.4
2397715	3916871	11/12/2018 11:17 am	11/15/2018 8:55 am	Hoover Middle School First Floor Room 125	< 0.4
2397717	3916872	11/12/2018 11:20 am	11/15/2018 8:56 am	Hoover Middle School First Floor Room 138A	< 0.4
2397718	3916875	11/12/2018 11:21 am	11/15/2018 8:57 am	Hoover Middle School First Floor Room 126	< 0.4
2397719	3916866	11/12/2018 11:24 am	11/15/2018 8:57 am	Hoover Middle School First Floor Room 127	0.7
2397720	3916867	11/12/2018 11:25 am	11/15/2018 8:57 am	Hoover Middle School First Floor Room 128	< 0.4
2397721	3916863	11/12/2018 11:25 am	11/15/2018 8:56 am	Hoover Middle School First Floor Room 128	< 0.4
2397722	3916864	11/12/2018 11:26 am	11/15/2018 8:59 am	Hoover Middle School First Floor Room 132	1.1

**Comment:** Unable to report a result for devices 3916877, 3916874, 3913857, 3913782 and 3913828 they were not analyzed. Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3916622 (Kitchen).

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/17/2018 Date Reported: 01/31/2019

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NELAC NY 11769  
NRPP 103216 AL  
NRSB ARL0017

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  
Hoover Middle School  
Potomac MD 20854

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
2397723	3916869	11/12/2018 11:27 am 11/15/2018 8:59 am	Hoover Middle School First Floor Room 131	0.6
2397724	3916870	11/12/2018 11:30 am 11/15/2018 9:01 am	Hoover Middle School First Floor Room 135	1.0
2397725	3916865	11/12/2018 11:31 am 11/15/2018 9:01 am	Hoover Middle School First Floor Room 136	< 0.4
2397726	3916868	11/12/2018 11:35 am 11/15/2018 9:01 am	Hoover Middle School First Floor Room 139	< 0.4
2397727	3916781	11/12/2018 11:39 am 11/15/2018 9:20 am	Hoover Middle School First Floor Room 146	< 0.4
2397728	3916783	11/12/2018 11:40 am 11/15/2018 9:15 am	Hoover Middle School First Floor Room 149	< 0.4
2397729	3916619	11/12/2018 11:40 am 11/15/2018 9:15 am	Hoover Middle School First Floor Room 148	< 0.4
2397730	3916618	11/12/2018 11:43 am 11/15/2018 9:15 am	Hoover Middle School First Floor Room 153	< 0.4
2397731	3916613	11/12/2018 11:43 am 11/15/2018 9:15 am	Hoover Middle School First Floor Room 153	< 0.4
2397732	3916637	11/12/2018 11:43 am 11/15/2018 9:22 am	Hoover Middle School First Floor Room 154	< 0.4
2397733	3916790	11/12/2018 11:45 am 11/15/2018 9:22 am	Hoover Middle School First Floor Room 155	< 0.4

**Comment:** Unable to report a result for devices 3916877, 3916874, 3913857, 3913782 and 3913828 they were not analyzed. Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3916622 (Kitchen).

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/17/2018 Date Reported: 01/31/2019

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NRPP 103216 AL  
NRSB ARL0017

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  
Hoover Middle School  
Potomac MD 20854

Log Number	Device Number	Test Exposure Duration:			Area Tested	Result pCi/L
2397734	3916785	11/12/2018	11:47 am	11/15/2018 9:23 am	Hoover Middle School First Floor Room 168	0.6
2397735	3916840	11/12/2018	11:47 am	11/15/2018 9:24 am	Hoover Middle School First Floor Room 167	< 0.4
2397736	3916835	11/12/2018	11:48 am	11/15/2018 9:24 am	Hoover Middle School First Floor Room 166	0.4
2397737	3916837	11/12/2018	11:48 am	11/15/2018 9:24 am	Hoover Middle School First Floor Room 165	0.6
2397738	3916615	11/12/2018	11:48 am	11/15/2018 9:27 am	Hoover Middle School First Floor Room 164	2.2
2397739	3916784	11/12/2018	11:50 am	11/15/2018 9:28 am	Hoover Middle School First Floor Room 163	< 0.4
2397740	3916620	11/12/2018	11:52 am	11/15/2018 9:29 am	Hoover Middle School First Floor Room 162	0.5
2397741	3916838	11/12/2018	11:53 am	11/15/2018 9:29 am	Hoover Middle School First Floor Room 161	< 0.4
2397742	3916839	11/12/2018	11:53 am	11/15/2018 9:30 am	Hoover Middle School First Floor Room 161	< 0.4
2397743	3916855	11/12/2018	11:56 am	11/15/2018 9:32 am	Hoover Middle School First Floor Room 177B	< 0.4
2397744	3916856	11/12/2018	11:57 am	11/15/2018 9:32 am	Hoover Middle School First Floor Room 173	< 0.4

**Comment:** Unable to report a result for devices 3916877, 3916874, 3913857, 3913782 and 3913828 they were not analyzed. Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3916622 (Kitchen).

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018    Date Logged: 11/17/2018    Date Analyzed: 11/17/2018    Date Reported: 01/31/2019

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NELAC NY 11769  
NRPP 103216 AL  
NRSB ARL0017

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  
Hoover Middle School  
Potomac MD 20854

Log Number	Device Number	Test Exposure Duration:			Area Tested	Result pCi/L
2397745	3916853	11/12/2018	11:58 am	11/15/2018 9:33 am	Hoover Middle School First Floor Room 17	< 0.4
2397746	3916851	11/12/2018	11:59 am	11/15/2018 9:34 am	Hoover Middle School First Floor Room 175	0.8
2397747	3916854	11/12/2018	11:59 am	11/15/2018 9:31 am	Hoover Middle School First Floor Room 174	< 0.4
2397748	3916859	11/12/2018	12:07 pm	11/15/2018 9:36 am	Hoover Middle School First Floor Room 178	0.9
2397749	3916860	11/12/2018	12:08 pm	11/15/2018 9:37 am	Hoover Middle School First Floor Room 180	1.1
2397750	3916852	11/12/2018	12:09 pm	11/15/2018 9:36 am	Hoover Middle School First Floor Room 177A	< 0.4
2397752	3916858	11/12/2018	12:11 pm	11/15/2018 9:09 am	Hoover Middle School First Floor Room 182	0.8
2397753	3916786	11/12/2018	12:12 pm	11/15/2018 9:40 am	Hoover Middle School First Floor Room 183	1.3
2397754	3916636	11/12/2018	12:14 pm	11/15/2018 9:42 am	Hoover Middle School First Floor Room 182	< 0.4
2397755	3916616	11/12/2018	12:17 pm	11/15/2018 9:44 am	Hoover Middle School First Floor Room 199A	< 0.4
2397756	3916809	11/12/2018	12:18 pm	11/15/2018 9:44 am	Hoover Middle School First Floor Room 199	< 0.4

**Comment:** Unable to report a result for devices 3916877, 3916874, 3913857, 3913782 and 3913828 they were not analyzed. Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3916622 (Kitchen).

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018    Date Logged: 11/17/2018    Date Analyzed: 11/17/2018    Date Reported: 01/31/2019

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NELAC NY 11769  
NRPP 103216 AL  
NRSB ARL0017

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  
Hoover Middle School  
Potomac MD 20854

Log Number	Device Number	Test Exposure	Duration:	Area Tested	Result pCi/L
2397757	3916638	11/12/2018 12:18 pm	11/15/2018 9:44 am	Hoover Middle School First Floor Room 199B	< 0.4
2397758	3916770	11/12/2018 12:20 pm	11/15/2018 9:44 am	Hoover Middle School First Floor Room 188	< 0.4
2397759	3916635	11/12/2018 12:21 pm	11/15/2018 9:46 am	Hoover Middle School First Floor Room 189	0.7
2397760	3916769	11/12/2018 12:21 pm	11/15/2018 9:46 am	Hoover Middle School First Floor Room 189A	< 0.4
2397761	3916832	11/12/2018 12:24 pm	11/15/2018 9:47 am	Hoover Middle School First Floor Room Café	< 0.4
2397762	3916787	11/12/2018 12:24 pm	11/15/2018 9:47 am	Hoover Middle School First Floor Room Café	< 0.4
2397763	3916611	11/12/2018 12:24 pm	11/15/2018 9:48 am	Hoover Middle School First Floor Room Café	< 0.4
2397764	3916622	11/12/2018 12:31 pm	11/15/2018 9:56 am	Hoover Middle School First Flr Rm Kitchen	< 0.4
2397765	3916623	11/12/2018 12:31 pm	11/15/2018 9:56 am	Hoover Middle School First Floor Room 196B	< 0.4
2397766	3916834	11/12/2018 12:32 pm	11/15/2018 9:55 am	Hoover Middle School First Floor Room 196G	0.4
2397767	3916788	11/12/2018 12:33 pm	11/15/2018 9:55 am	Hoover Middle School First Floor Room 191	< 0.4

**Comment:** Unable to report a result for devices 3916877, 3916874, 3913857, 3913782 and 3913828 they were not analyzed. Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3916622 (Kitchen).

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/17/2018 Date Reported: 01/31/2019

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NELAC NY 11769  
NRPP 103216 AL  
NRSB ARL0017

EPA Method #402-R-92-004  
Charcoal Canister  
NRPP Device Code 6048  
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Laboratory Report for:

Property Tested: Project # 04481387-1

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


MCPS Radon Survey  
Hoover Middle School  
Potomac MD 20854

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
2397768	3916626	11/12/2018 12:37 pm 11/15/2018 9:56 am	Hoover Middle School First Floor Room 194	1.7
2397769	3916629	11/12/2018 12:38 pm 11/15/2018 9:56 am	Hoover Middle School First Flr Rm 194 Office	< 0.4
2397770	3916833	11/12/2018 12:41 pm 11/15/2018 9:57 am	Hoover Middle School First Floor Room 195A	< 0.4
2397772	3916628	11/12/2018 12:43 pm 11/15/2018 9:58 am	Hoover Middle School First Floor Room 195B	< 0.4
2397773	3916789	11/12/2018 12:45 pm 11/15/2018 9:58 am	Hoover Middle School First Floor Room 193	< 0.4
2397774	3916836	11/12/2018 12:45 pm 11/15/2018 10:03 am	Hoover Middle School First Floor Room 193	< 0.4
2397775	3916627	11/12/2018 12:50 pm 11/15/2018 10:03 am	Hoover Middle School Second Floor Room 204	0.4
2397776	3916630	11/12/2018 12:50 pm 11/15/2018 10:03 am	Hoover Middle School Second Floor Room 221	< 0.4
2397777	3916621	11/12/2018 12:51 pm 11/15/2018 10:09 am	Hoover Middle School Flr Lower Level Rm 001	< 0.4
2397778	3916624	11/12/2018 12:52 pm 11/15/2018 10:04 am	Hoover Middle School Flr Lower Level Rm 011	0.4
2397779	3916612	11/12/2018 12:54 pm 11/15/2018 10:04 am	Hoover Middle School Flr Lower Level Rm 007	1.4

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Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/17/2018 Date Reported: 01/31/2019

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Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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EPA Method #402-R-92-004  
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Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)  
2930 Eskridge Road  
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MCPS Radon Survey  
Hoover Middle School  
Potomac MD 20854

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
2397780	3916634	11/12/2018 12:57 pm 11/15/2018 10:09 am	Hoover Middle School Flr Lower Level Rm 008	< 0.4
2397781	3916641	11/12/2018 1:00 pm 11/15/2018 10:09 am	Hoover Middle School Lower Level Room 009	< 0.4
2397782	3916831	11/12/2018 1:01 pm 11/15/2018 10:13 am	Hoover Middle School Flr Lower Level Rm 012	< 0.4
2397783	3916644	11/12/2018 1:03 pm 11/15/2018 10:13 am	Hoover Middle School Flr Lower Level Rm 013	< 0.4
2397784	3916632	11/12/2018 1:03 pm 11/15/2018 10:11 am	Hoover Middle School Flr Lower Level Rm 013	< 0.4
2397785	3916631	11/12/2018 1:04 pm 11/15/2018 10:14 am	Hoover Middle School Flr Lower Level Rm 016	< 0.4
2397786	3916808	11/12/2018 1:05 pm 11/15/2018 10:15 am	Hoover Middle School Flr Lower Level Rm 017	0.8
2397787	3916639	11/12/2018 1:07 pm 11/15/2018 10:16 am	Hoover Middle School Flr Lower Level Rm 018	0.8
2397788	3916771	11/12/2018 1:10 pm 11/15/2018 10:16 am	Hoover Middle School Flr Lower Level Rm 031	< 0.4
2397789	3916773	11/12/2018 1:11 pm 11/15/2018 10:17 am	Hoover Middle School Flr Lower Level Rm 030	< 0.4
2397791	3916625	11/12/2018 1:12 pm 11/15/2018 10:18 am	Hoover Middle School Flr Lower Level Rm 028	0.4

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Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/17/2018 Date Reported: 01/31/2019

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Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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Property Tested: Project # 04481387-1

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2930 Eskridge Road  
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MCPS Radon Survey  
Hoover Middle School  
Potomac MD 20854

Log Number	Device Number	Test Exposure	Duration:	Area Tested	Result pCi/L
2397792	3916774	11/12/2018 1:12 pm	11/15/2018 10:18 am	Hoover Middle School Flr Lower Level Rm 027	< 0.4
2397793	3916777	11/12/2018 1:15 pm	11/15/2018 10:21 am	Hoover Middle School Flr Lower Level Rm 025	0.5
2397794	3916827	11/12/2018 1:15 pm	11/15/2018 10:21 am	Hoover Middle School Flr Lower Level Rm 024	0.7
2397795	3916617	11/12/2018 1:17 pm	11/15/2018 10:22 am	Hoover Middle School Flr Lower Level Rm 032	0.7
2397796	3916655	11/12/2018 1:18 pm	11/15/2018 10:22 am	Hoover Middle School Flr Lower Level Rm 033	< 0.4
2397797	3916614	11/12/2018 1:19 pm	11/15/2018 10:23 am	Hoover Middle School Flr Lower Level Rm 034	< 0.4
2397798	3916776	11/12/2018 1:19 pm	11/15/2018 10:23 am	Hoover Middle School Flr Lower Level Rm 034	< 0.4
2397799	3916633	11/12/2018 1:20 pm	11/15/2018 10:24 am	Hoover Middle School Flr Lower Level Rm 035	< 0.4
2397800	3916889	11/12/2018 1:21 pm	11/15/2018 10:27 am	Hoover Middle School Lower Level Room 036	< 0.4
2397801	3916886	11/12/2018 1:29 pm	11/15/2018 10:33 am	Hoover Middle School Flr Lower Level Rm 044A	< 0.4
2397802	3916885	11/12/2018 1:29 pm	11/15/2018 10:34 am	Hoover Middle School Flr Lower Level Rm 044A	0.4

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Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/17/2018 Date Reported: 01/31/2019

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Report Approved By: 

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Laboratory Report for:

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MCPS Radon Survey  
Hoover Middle School  
Potomac MD 20854

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
2397803	3916890	11/12/2018 1:31 pm - 11/15/2018 10:41 am	Hoover Middle School Flr Lower Level Rm 045A	< 0.4
2397804	3916887	11/12/2018 1:33 pm - 11/15/2018 10:32 am	Hoover Middle School Flr Lower Level Rm 44	< 0.4
2397805	3916888	11/12/2018 1:35 pm - 11/15/2018 10:32 am	Hoover Middle School Flr Lower Level Rm 045	< 0.4
2397806	3918137	11/12/2018 11:02 am - 11/15/2018 10:33 am	Hoover Middle School First Floor	< 0.4
2397807	3918133	11/12/2018 11:02 am - 11/15/2018 10:33 am	Hoover Middle School First Floor	< 0.4
2397808	3916192	11/12/2018 6:00 am - 11/15/2018 10:33 am	Hoover Middle School First Floor	< 0.4
2397809	3916280	11/12/2018 6:00 am - 11/15/2018 10:33 am	Hoover Middle School First Floor	< 0.4

**Comment:** Unable to report a result for devices 3916877, 3916874, 3913857, 3913782 and 3913828 they were not analyzed. Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3916622 (Kitchen).

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/17/2018 Date Reported: 01/31/2019

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

**Disclaimer:**

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.

NELAC NY 11769  
NRPP 103216 AL  
NRSB ARL0017

EPA Method #402-R-92-004  
Liquid Scintillation  
NRPP Device Code 8088  
NRSB Device Code 12193

Laboratory Report for:

Property Tested:

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


MCPS Radon Survey  
Hoover Middle School  
Potomac MD 20854


Log Number	Device Number	Test	Exposure	Duration:	Area Tested	Result pCi/L
2393021	3881278	11/12/2018	1:26 pm	11/15/2018 10:30 am	Bldg Hoover Middle School Flr Lower level Rm 04	< 0.4
2393022	3881282	11/12/2018	1:27 pm	11/15/2018 10:30 am	Bldg Hoover Middle School Flr Lower level Rm 04	0.5
2393023	3881286	11/12/2018	11:59 am	11/15/2018 9:07 am	Bldg. Hoover Middle School Floor 1 Room 170A	< 0.4
2393024	3881297	11/12/2018	1:36 pm	11/15/2018 10:33 am	Bldg Hoover Middle School Flr Lower level Rm 04	0.9
2393025	3881296	11/12/2018	1:25 pm	11/15/2018 10:29 am	Bldg Hoover Middle School Flr Lower level Rm 03	< 0.4
2393026	3881298	11/12/2018	1:36 pm	11/15/2018 10:33 am	Bldg Hoover Middle School Flr Lower level Rm 04	0.4

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

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018    Date Logged: 11/17/2018    Date Analyzed: 11/19/2018    Date Reported: 12/17/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

**Disclaimer:**

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.

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

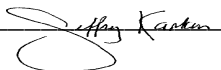
Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
3204125	3926831	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	36.1
3204126	3926832	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.8
3204127	3926833	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	33.7
3204128	3926834	12/07/2018 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:**

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.

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.

# 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. Arcola ES      | 7. North Lake Center | 13. Cold Spring ES |
| 2. Glen Haven ES  | 8. Barnsley ES       | 14. Hoover MS      |
| 3. Jackson Road   | 9. Bayard Rustin ES  | 15. Wayside ES     |
| 4. Cashell ES     | 10. Julius West MS   | 16. English Manor  |
| 5. Frost MS       | 11. Rock Terrace HS  |                    |
| 6. Meadow Hall ES | 12. Churchill HS     |                    |

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	Date	Initials
Radon Test Kits Deployed	11/12/2018	NL
Radon Test Kits Sampled	11/15/2018	NL
Radon Test Kits Shipped to Lab*	11/15/2018	NL
Radon Test Kits Received by Lab*	11/17/2018; 11/18/2018	NL

\*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: Herbert Hoover Middle School

Date of Test Report:	10/24/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	5
# Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	0.7

#### Project Status:

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





October 24, 2016

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

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

Location: Herbert Hoover Middle School  
8810 Postoak Road  
Rockville, MD 20854

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 Herbert Hoover Middle School, located at 8810 Postoak Road in Rockville, MD 20854 (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 September 26, 2016 and deployed seven (7) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on September 29, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

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

These tests represent:

- Post-mitigation testing for radon mitigation systems installed recently.

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

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

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

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

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

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

### **Results:**

The results of the radon test analysis indicated the following:

<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	

Notes:

D- Duplicate sample

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

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

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

Sincerely,



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

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

# ATTACHMENT A

## Floor Plan With Test Locations

# ATTACHMENT B

## Radon Test Summary Spreadsheet

<b>Radon Testing Results</b>		
<b>Herbert Hoover Middle School</b>		
<b>Test Period: 09/26/16-09/29/16</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7801938	30	< 0.3
7801944	31	0.5
7801949	33	< 0.3
7801948	34	0.7
7801950	* 35 (Missing)	-

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Herbert Hoover Middle School</b>		
<b>Test Period: 09/26/16-09/29/16</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result</b>
7801946	* D (35:Missing)	-
7801947	* FB (35:Missing)	-

Table Note:

\* Missing or Compromised Sample

# ATTACHMENT C

## Laboratory Analytical Results



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October 21, 2016

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

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Radon test result report for:

**HERBERT HOOVER MIDDLE SCHOOL  
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>
7801938	30	2016-09-26 @ 2:00 pm	2016-09-29 @ 12:00 pm	< 0.3	2016-10-03
7801944	31	2016-09-26 @ 2:00 pm	2016-09-29 @ 12:00 pm	0.5 ± 0.3	2016-10-03
7801949	33	2016-09-26 @ 2:00 pm	2016-09-29 @ 12:00 pm	< 0.3	2016-10-03
7801948	34	2016-09-26 @ 2:00 pm	2016-09-29 @ 12:00 pm	0.7 ± 0.3	2016-10-03
7801950	35	@	@		
7801946	35	@	@		
7801947	35	@	@		

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

October 7, 2016

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

Radon test result report for:

**MCPS Radon**

**Phase 18 Office Blanks**

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

Radon test result report for:

**MCPS Radon****Phase 18 Transit Blanks**

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

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October 12, 2016

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

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

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

---

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

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

**EXPOSURE IN BOWSER-MORNER RADON CHAMBER**

CLIENT KCI Technologies Inc. Job Number 176788

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

Date Start: 9/24/16 Date Stop: 9/26/16 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0758 Time Stop: 0758 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

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

7769899, 7769884, 7769885, \_\_\_\_\_

7769889, 7769890, 7769891 \_\_\_\_\_

F3 Left

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

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

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

\_\_\_\_\_

\_\_\_\_\_

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

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

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

\_\_\_\_\_

\_\_\_\_\_

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



## Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 18

Name of Schools:

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

---

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

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



## Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 18

Name of Schools:

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

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

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

RADON SCREENING SURVEY – FOLLOW-UP HERBERT HOOVER MIDDLE SCHOOL

8810 Postoak Road, Rockville, Maryland 20854

EXECUTIVE SUMMARY

Date of Test Report:	3/18/16 Follow-Up
Round of Testing:	Initial <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">Follow-up</span> Post Remediation
# Rooms Tested	5
# Rooms $\geq$ 4.0 pCi/L:	1
Low Value:	<0.3
High Value:	5.9
Confirmed Rooms $\geq$ 4.0 pCi/L US EPA Action Level	1

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

Room	Result (pCi/L) 1/28/16 Initial	Result (pCi/L) 3/18/16 Follow-Up	Average Result (pCi/L)
34	4.9	5.9	5.4
106	<0.3 Tampered	1.0	0.7
27	--- Missing	<0.3	<0.3
40	--- Missing	<0.3	<0.3
31	3.6	2.6	3.1





### MCPS RADON TESTING

#### Executive Summary: Herbert Hoover Middle School

Date of Test Report:	3/18/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	5
# Rooms $\geq$ 4.0 pCi/L:	1
Low Value:	< 0.3
High Value:	5.9

Rooms with results  $\geq$  4.0 pCi/L:  
34 (5.9 pCi/L)

#### Project Status:

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



March 18, 2016

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

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

Location: Herbert Hoover Middle School  
8810 Postoak Road  
Rockville, MD 20854

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 Herbert Hoover Middle School, located at 8810 Postoak Road in Rockville, MD 20854 (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 22, 2016 and deployed seven (7) 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 25, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936

Butler Bridge Road, Mills River, North Carolina.

**Evaluation of Testing Conditions:**

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

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

KCI also conducted observations of field conditions which could affect the results of the test and compiled weather data for the testing period. Note that strong storms and heavy rainfall were recorded during the test period. The unusual weather conditions may have resulted in atypical radon test results for this facility.

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

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

**Results:**

The results of the radon test analysis indicated the following:

<b>Radon Concentration</b>	<b>Room</b>	<b>Result</b>
<b><math>\geq 4.0</math> pCi/L</b>	34	5.9
<b><math>&lt; 4.0</math> pCi/L</b>	See Attachment B	

Notes:  
D- Duplicate sample

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

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

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

Sincerely,



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

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

# ATTACHMENT A

## Floor Plan With Test Locations

# ATTACHMENT B

## Radon Test Summary Spreadsheet

**Table Notes:**

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank\*

PM- Project Manager

QC- Quality Control

\*Office blanks were submitted at a rate of 1% for all samples deployed in Phase 9 testing. Office blanks were not submitted under each school individually.

<b>Radon Testing Results</b>		
<b>Herbert Hoover Middle School</b>		
<b>Test Period: 02/22/16-02/25/16</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7732362	27	< 0.3
7732360	31	2.6
7732358	34	5.9
7732359	40	< 0.3
7732364	106	1.0

Table Note:

\* Missing or Compromised Sample



<b>Radon Testing Results</b>		
<b>Herbert Hoover Middle School</b>		
<b>Test Period: 02/22/16-02/25/16</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result</b>
7732357	D (106)	0.6
7732363	FB (34)	< 0.3

Table Note:

\* Missing or Compromised Sample

# ATTACHMENT C

## Laboratory Analytical Results

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

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Radon test result report for:  
**HOOVER MIDDLE SCHOOL  
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>
7732357	106	2016-02-22 @ 12:00 pm	2016-02-25 @ 10:00 am	0.6 ± 0.3	2016-02-29
7732364	106	2016-02-22 @ 12:00 pm	2016-02-25 @ 10:00 am	1.0 ± 0.3	2016-02-29
7732362	27	2016-02-22 @ 12:00 pm	2016-02-25 @ 10:00 am	< 0.3	2016-02-29
7732360	31	2016-02-22 @ 12:00 pm	2016-02-25 @ 10:00 am	2.6 ± 0.5	2016-02-29
7732358	34	2016-02-22 @ 12:00 pm	2016-02-25 @ 10:00 am	5.9 ± 0.7	2016-02-29
7732363	34	2016-02-22 @ 12:00 pm	2016-02-25 @ 10:00 am	< 0.3	2016-02-29
7732359	40	2016-02-22 @ 12:00 pm	2016-02-25 @ 10:00 am	< 0.3	2016-02-29

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

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Radon test result report for:  
**MCPS**  
**Phase 9 Office Blanks**

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

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

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

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Radon test result report for:  
**MCPS**  
**Phase 9 Office Blanks**

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

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

February 23, 2016  
**LABORATORY ANALYSIS REPORT**

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

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

February  
15,  
2016

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

Spike Sample Laboratory Results

Radon test result report for:  
**MCPS**

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

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

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

# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCF Technologies Inc. Job Number 173704

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

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

Time Start: 0926 Time Stop: 0926 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

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

7718281, 7718282, 7718291, \_\_\_\_\_

7718288, 7718289, 7718273 \_\_\_\_\_

ε3 Left

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

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

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

\_\_\_\_\_

\_\_\_\_\_

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

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

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

\_\_\_\_\_

\_\_\_\_\_

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





## Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 9

Name of Schools:

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

---

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

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



## Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 9

Name of Schools:

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

---

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

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



### MCPS RADON TESTING

#### Executive Summary: Herbert Hoover Middle School

Date of Test Report:	1/28/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	71
# Rooms $\geq$ 4.0 pCi/L:	1
Low Value:	< 0.3
High Value:	4.9

Rooms with results  $\geq$  4.0 pCi/L:  
Room 34 (4.9 pCi/L)

#### Project Status:

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



January 28, 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 # 12146341.22

Location: Herbert Hoover Middle School  
8810 Postoak Road  
Rockville, MD 20854

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 Albert Einstein High School, located at 8810 Postoak Road in Rockville, Maryland 20854 (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 January 4, 2016 and deployed eighty-four (84) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on January 7, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936 Butler

Bridge Road, Mills River, North Carolina.

**Evaluation of Testing Conditions:**

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

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

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

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

**Results:**

The results of the radon test analysis indicated the following:

<b>Radon Concentration</b>	<b>Room</b>	<b>Result</b>
$\geq 4.0$ pCi/L	34	4.9
$< 4.0$ pCi/L	See Attachment B	

Notes:  
D- Duplicate sample

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

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

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

Sincerely,



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

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

# ATTACHMENT 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		
Herbert Hoover MS		
Test Period: 01/04/16-01/07/16		
Kit Number	Room / Area	Result
7706393	1	< 0.3
7706379	7	1
7704832	8	0.9
7706378	9	0.7
7704903	11	< 0.3
7706475	12	0.8
7706385	13	< 0.3
7706389	16	0.6
7706656	17	1.4
7706310	18	1.8
7706655	24	1.3
7706651	25	0.8
7706370	26	1
7706367	28	< 0.3
7706693	29	2.2
7706390	30	< 0.3
7706695	31	3.6
7706694	32	0.8
7706696	33	1
7706697	34	4.9
7706660	35	1.1
7706394	36	0.8
7706698	39	< 0.3
7708655	41	0.7
7706362	46	< 0.3
7706669	46	< 0.3
7704810	100	0.7
7706457	101	0.7
7704025	102	0.7
7704023	103	< 0.3
7704229	104	0.7
7706670	105	0.5
7706377	107	< 0.3
7704674	110	0.8
7706579	114	0.6
7706668	115	0.6
7704813	119	0.7
7714304	121	0.5
7706374	124	< 0.3
7706376	125	0.7
7704018	126	< 0.3
7706384	127	< 0.3
7706382	128	< 0.3
7706729	131	< 0.3
7704024	132	< 0.3
7714307	135	< 0.3

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Herbert Hoover MS</b>		
<b>Test Period: 01/04/16-01/07/16</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7714303	136	0.7
7706463	138	< 0.3
7706725	138	0.6
7706573	146	< 0.3
7706462	166	0.6
7706474	180	< 0.3
7704808	185	< 0.3
7706320	188	0.8
7706597	189	0.5
7706455	192	0.9
7706453	192	0.7
7706398	194	< 0.3
7706396	195	< 0.3
7706395	199	< 0.3
7706600	212	< 0.3
7706373	215	< 0.3
7706371	044A	1.5
7706388	045A	2
7708648	* 106 (Tampered)	< 0.3
7706701	114A	< 0.3
7706728	138A	0.5
7706391	199D	0.6
7706700	* 27 (Missing)	0
7706699	* 40 (Missing)	0
7704812	MUSIC OFFICE	< 0.3

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Herbert Hoover MS</b>		
<b>Test Period: 01/04/16-01/07/16</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result</b>
7714305	D (100)	< 0.3
7714306	D (101)	< 0.3
7714309	D (102)	< 0.3
7714310	D (103)	< 0.3
7714308	D (104)	< 0.3
7714312	D (105)	0.6
7714313	D (106)	< 0.3
7714311	FB (107)	< 0.3
7714314	FB (124)	< 0.3
7714315	FB (125)	< 0.3
7714318	FB (126)	< 0.3
7714317	OB (0)	< 0.3
7714321	OB (0)	< 0.3

Table Note:

\* Missing or Compromised Sample

# ATTACHMENT C

## Laboratory Analytical Results

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January 25, 2016  
**\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:  
**HERBERT HOOVER MS  
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>
7706579	114	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	0.6 ± 0.3	2016-01-12

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

January 25, 2016  
\*\* LABORATORY ANALYSIS REPORT \*\*

Radon test result report for:  
**HERBERT HOOVER MS**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7714317	0	2016-01-04 @ 1:00 pm	2016-01-07 @ 1:00 pm	< 0.3	2016-01-11
7714321	0	2016-01-04 @ 10:00 am	2016-01-07 @ 1:00 pm	< 0.3	2016-01-11
7706371	044A	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	1.5 ± 0.3	2016-01-11
7706388	045A	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	2.0 ± 0.4	2016-01-11
7706393	1	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7714305	100	2016-01-04 @ 6:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7704810	100	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	0.7 ± 0.4	2016-01-12
7714306	101	2016-01-04 @ 6:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706457	101	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	0.7 ± 0.3	2016-01-11
7704025	102	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	0.7 ± 0.3	2016-01-11
7714309	102	2016-01-04 @ 6:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7704023	103	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7714310	103	2016-01-04 @ 6:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-12
7704229	104	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	0.7 ± 0.3	2016-01-11
7714308	104	2016-01-04 @ 6:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706670	105	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	0.5 ± 0.3	2016-01-11
7714312	105	2016-01-04 @ 6:00 pm	2016-01-07 @ 11:00 am	0.6 ± 0.3	2016-01-11
7708648	106	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7714313	106	2016-01-04 @ 6:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706377	107	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7714311	107	2016-01-04 @ 6:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7704903	11	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7704674	110	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	0.8 ± 0.3	2016-01-11
7706701	114A	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706668	115	2016-01-04 @ 6:00 pm	2016-01-07 @ 11:00 am	0.6 ± 0.3	2016-01-12
7704813	119	2016-01-04 @ 6:00 pm	2016-01-07 @ 11:00 am	0.7 ± 0.4	2016-01-12
7706475	12	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.8 ± 0.3	2016-01-11
7714304	121	2016-01-04 @ 6:00 pm	2016-01-07 @ 11:00 am	0.5 ± 0.3	2016-01-11
7706374	124	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7714314	124	2016-01-04 @ 6:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706376	125	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	0.7 ± 0.3	2016-01-11
7714315	125	2016-01-04 @ 6:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7714318	126	2016-01-04 @ 6:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7704018	126	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-12
7706384	127	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706382	128	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706385	13	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-12

January 25, 2016  
**LABORATORY ANALYSIS REPORT**

Radon test result report for:  
**HERBERT HOOVER MS**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7706729	131	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7704024	132	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-12
7714307	135	2016-01-04 @ 6:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7714303	136	2016-01-04 @ 6:00 pm	2016-01-07 @ 11:00 am	0.7 ± 0.3	2016-01-12
7706463	138	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706725	138	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	0.6 ± 0.4	2016-01-12
7706728	138A	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	0.5 ± 0.3	2016-01-11
7706573	146	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706389	16	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.6 ± 0.3	2016-01-12
7706462	166	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	0.6 ± 0.4	2016-01-12
7706656	17	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	1.4 ± 0.4	2016-01-12
7706310	18	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	1.8 ± 0.4	2016-01-11
7706474	180	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7704808	185	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706320	188	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.8 ± 0.4	2016-01-12
7706597	189	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	0.5 ± 0.3	2016-01-11
7706453	192	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	0.7 ± 0.3	2016-01-11
7706455	192	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	0.9 ± 0.3	2016-01-12
7706398	194	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706396	195	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706395	199	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706391	199D	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	0.6 ± 0.3	2016-01-11
7706600	212	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706373	215	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-12
7706655	24	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	1.3 ± 0.3	2016-01-11
7706651	25	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.8 ± 0.3	2016-01-11
7706370	26	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	1.0 ± 0.4	2016-01-12
7706700	27	@	@		
7706367	28	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706693	29	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	2.2 ± 0.4	2016-01-12
7706390	30	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706695	31	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	3.6 ± 0.5	2016-01-12
7706694	32	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.8 ± 0.3	2016-01-12
7706696	33	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	1.0 ± 0.3	2016-01-11
7706697	34	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	4.9 ± 0.6	2016-01-12
7706660	35	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	1.1 ± 0.4	2016-01-12
7706394	36	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.8 ± 0.4	2016-01-12

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January 25, 2016 **\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:  
**HERBERT HOOVER MS  
MAIN**

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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7706698	39	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706699	40	@	@		
7708655	41	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.7 ± 0.3	2016-01-12
7706669	46	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706362	46	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7706379	7	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	1.0 ± 0.3	2016-01-12
7704832	8	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.9 ± 0.3	2016-01-11
7706378	9	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.7 ± 0.4	2016-01-12
7704812	MUSIC OFFICE	2016-01-04 @ 5:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11

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January 15, 2016  
\*\* LABORATORY ANALYSIS REPORT \*\*

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



### Chain of Custody

Project Name: MCPS Radon Phase IV

Name of Schools:

- |                            |                            |                           |
|----------------------------|----------------------------|---------------------------|
| 1. Albert Einstein HS      | 12. Herbert Hoover MS      | 23. Stephen Knolls School |
| 2. Bel Pre ES              | 13. Kohn F. Kennedy HS     | 24. Strathmore ES         |
| 3. Benjamin Banneker MS    | 14. Julius West MS         | 25. Summit Hall ES        |
| 4. Bethesda Chevy Chase HS | 15. Kensington Parkwood ES | 26. Travilah ES           |
| 5. Beverly Farms ES        | 16. Lakewood ES            | 27. Twinbrook ES          |
| 6. Cabin John MS           | 17. Mill Creek ES          | 28. Waters Landing ES     |
| 7. Chevy Chase ES          | 18. Montgomery Blair HS    | 29. Watkins Mill HAS      |
| 8. Farmland ES             | 19. Montgomery Village MS  | 30. Weller Road ES        |
| 9. Forest Oak MS           | 20. Northwood HS           | 31. White Oak MS          |
| 10. Gaithersburg HS        | 21. Paint Branch ES        | 32. Winston Churchill HS  |
| 11. Garrett Park ES        | 22. Rock Creek Forest ES   |                           |

	Date	Initials
Radon Test Kits Deployed	1/4/16	JM
Radon Test Kits Sampled	1/7/16	JM
Radon Test Kits Shipped to Lab*	1/8/16	JM
Radon Test Kits Received by Lab*	1/11/16	JM

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

Note: tests kits deployed at Montgomery Blair HS 1/4/16 and 1/5/16, test kits sampled at Montgomery Blair HS 1/7/16 and 1/8/16