

# School / Facility Radon Testing Report Form

*Instructions:* Submit one testing report form per-facility per-round of testing. Include the following as attachments: Attachment 1- Summary Data Tables – containing the following: (see attached samples tables)

- Testing Results lab/detector Identification, by room number/name (alpha-numeric order) as depicted on facility map/floor plan provided by the facility/school at the time of test device deployment;
- Summary Results list of rooms by test result ≥2.0-pCi/L; ≥2.7-pCi/L; ≥4.0-pCi/L; and ≥8.0-pCi/L;
- QA/QC Results (field blanks and duplicates) indicating location collected; trip and office blanks; and spike sample results;
- Invalid Measurement Locations missed locations, missing and or damaged/compromised testing devices. Attachment 2 – Laboratory Report(s)

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

School Year: 23-24

Facility:	Damascus High School	
Address:	25921 Ridge Road	
	Damascus, MD 20872	

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

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

Mitigation -	Facility Radon Status:
Not Required or Considered	🛛 No Change in Status
Required (>8.0-pCi/L)	Active Mitigation (2-year regular schedule)
☐ Required (≥4.0-pCi/L)	
□ Consider (≥2.0 & <4.0-pCi/L)	No Active Mitigation (5-year regular schedule)

#### **Detector and Deployment**



Detector/Device Type:	Passive       Charcoal Absorption (CAD)       Alpha Track (ATD)       Other         Continuous       Electret ion Chamber (EIC)       Electronic Integration (EID)         Other-Specify here:       Electronic Integration (EID)			
Detector/Device Name:	Air Chek – Radon T	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.	
If noncertified individ	luals, the qualified me	asurement professional pro	viding oversight -	
Tyler McCleaf, CSP – Cert. #111004-RMP		KCI Technologies, Inc.		

# Testing

Short-Term	Length of	3	Date of Deployment and	1/	/30/2024
Long-Term	Test (days):	5	Retrieval (mm/dd/yy):		/2/2024
Does the test period include weekends, school breaks or holidays?					🛛 No
If " <b>Yes</b> " please explai	in/detail in the s	pace below:			
Was HVAC operation	Was HVAC operating under occupied conditions?				
If " <b>No</b> " please explain/detail in the space below:					

Testing (continued)



	Detectors Deployed		
	Ground-Contact	Total	
Test Locations <sup>1</sup>	121	6	127
Duplicates <sup>2</sup>	9	1	10
Field Blanks <sup>3</sup>	9	1	10
		Grand Total	147

1 – include all detectors deployed (duplicates, field blanks); 1 detector per occupied (or intended to be occupied) ground-contact space  $\leq$  2,000-square feet; large spaces  $\geq$  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 <u>per floor</u> (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
----------------------------	---	----------------------------	---	-----------------------------------	---

1 - 3% of EIC detectors; and 3% from <u>each LOT</u> of CAD and ATD detectors; a <u>maximum of 6-spiked</u> <u>measurements</u> per month for both EIC detectors and <u>each LOT</u> 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, <u>analyzed prior to deployment</u>, 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.	X Yes	🗆 No
Quality Control measurements comply with QA/QC requirements in the QA plan previously submitted?	🛛 Yes	🗆 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:	121	6	127
Number of locations ≥8.0-pCi/L:	0	0	0
Number of locations ≥4.0 and ≤8-pCi/L:	0	0	0
Number of locations ≥2.7 and ≤4-pCi/L:	0	0	0
Number of locations ≥2.0 and ≤4-pCi/L:	0	0	0
Number of missing required test locations <sup>3</sup> :	0	0	0
Percentage of missing test locations for the facility <sup>4,5</sup> :	0	0	0

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

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

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

4 – if all valid measurements are <4.0-pCi/L and the total number of test locations are  $\geq$ 18, there is an allowance of  $\leq$ 33%. If less than 18 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023;

5 – if any valid measurements are  $\geq$ 4.0-pCi/L and the total number of test locations are  $\geq$ 20, there is an allowance of  $\leq$ 25% of the total locations tested. If less than 20 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023.



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

Were test devices deployed in all occupied and intended to be occupied rooms in contact with	🛛 Yes	
the ground, and, if applicable, 10% of upper floor rooms?	🗆 No	
Were valid measurements obtained in all occupied and intended to be occupied rooms in	🛛 Yes	
contact with the ground, and, if applicable, 10% of upper floor rooms?	🗆 No	
<b>If Yes to both above</b> – then Testing Status – <b>'No Further Testing Needed'</b> mark 'NA' below and comple		
	section	
If No to either above, were all results obtained under 4.0-pCi/L and were there sufficient valid	□ Yes	
measurements obtained? <sup>1,2</sup>	🗆 No	
If Yes – then Testing Status - 'No Further Testing Needed' complete Conclusion section		
If No, then Testing Status - 'Follow-up Testing Required' continue below	🖾 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		

1 – 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 – Conducting Measurements of Radon in Multifamily, School, Commercial and Mix-Use Buildings to determine the allowance; 2 – 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 – Conducting Measurements of Radon in Multifamily, School, Commercial and Mix-Use Buildings to determine the 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 – Conducting Measurements of Radon in Multifamily, School, Commercial and Mix-Use Buildings to determine 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  $\geq$  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	Mitigation Required
≥ 4.0-pCi/L	<ol> <li>Short-term follow-up test</li> <li>Average the results of the two tests</li> </ol>	<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	
	Damascus High School	
Te	st Period: 01/30/2024 - 02/02/202	24
Kit Number	Room / Area	Result
11464520	1	0.5
11464521	2	< 0.3
11464519	3	1.1
11464513	4	0.5
11464511	5	0.9
11464512	5	0.9
11464510	7	< 0.3
11464509	8	0.5
11464508	9	0.8
11464507	10	0.5
11464506	11	< 0.3
11464504	12	0.7
11464545	50	< 0.3
11464558	51	1.0
11464539	52	< 0.3
11464540	52	< 0.3
11464547	52	< 0.3
11464346	102	< 0.3
11464309	105	< 0.3
11464326	105	< 0.3
11464345	105	< 0.3
11464397	108	< 0.3
11464359	111	< 0.3
11464313	112	0.5
11464360	112	< 0.3
11464372	112	< 0.3
11464368	113	< 0.3
11464348	115	< 0.3
11464355	116	< 0.3
11464361	117	< 0.3
11464366	118	< 0.3
11464367	119	< 0.3
11464356	120	< 0.3
11464365	120	< 0.3
11464374	121	< 0.3
11464319	130	< 0.3
11464324	131	0.6
11464310	132	1.3
11464311	132	1.3
11464317	133	0.7
11464312	134	1.5
11464323	135	< 0.3
11464335	136	< 0.3

Table 1- Radon Testing Results						
Damascus High School Test Period: 01/30/2024 - 02/02/2024						
Kit Number	Room / Area	Result				
11464329	137	< 0.3				
11464316	138	< 0.3				
11464331	139	0.7				
11464302	140	< 0.3				
11464303	142	< 0.3				
11464501	143	< 0.3				
11464502	143	< 0.3				
11464503	143	< 0.3				
11464304	144	0.5				
11464518	146	0.7				
11464514	149	< 0.3				
11464562	154	1.0				
11464560	158	0.7				
11464515	161	< 0.3				
11464516	163	< 0.3				
11464517	165	< 0.3				
11464522	165	< 0.3				
11464525	165	< 0.3				
11464548	170	< 0.3				
11464553	170	< 0.3				
11464554	171	< 0.3				
11464555	171	< 0.3				
11464537	172	< 0.3				
11464549	173	< 0.3				
11464546	174	< 0.3				
11464550	175	< 0.3				
11464551	176	< 0.3				
11464552	177	< 0.3				
11464542	178	0.5				
11464534	180	< 0.3				
11464530	181	< 0.3				
11464532	181	< 0.3				
11464528	182	< 0.3				
11464523	183	< 0.3				
11464536	183	< 0.3				
11464544	184	0.5				
11464563	205	< 0.3				
11464567	209	< 0.3				
11464568	209	< 0.3				
11464569	209	< 0.3				
11464533	214	< 0.3				
11464566	224	< 0.3				
11464573	235	0.6				

Table 1- Radon Testing Results					
Damascus High School Test Period: 01/30/2024 - 02/02/2024					
Kit Number	Room / Area	Result			
11464564	242	< 0.3			
11464358	102A	< 0.3			
11464357	102B	< 0.3			
11464306	102C	< 0.3			
11464347	102C	< 0.3			
11464351	103 CLASSROOM	< 0.3			
11464350	103 OFFICE	< 0.3			
11464352	103 SHOP	< 0.3			
11464333	104 CLASSROOM	< 0.3			
11464332	104 OFFICE	< 0.3			
11464354	108A	< 0.3			
11464353	108B	< 0.3			
11464314	112 OBSERVATORY	< 0.3			
11464373	118 OFFICE	< 0.3			
11464370	119A	< 0.3			
11464369	119B	< 0.3			
11464362	119C	N/A			
11464320	135 OFFICE	< 0.3			
11464341	136 ASSISTANT PRINCIPAL'S	0.8			
11464342	136 ASSISTANT PRINCIPAL'S OFFICE	0.8			
11464338	136 ASSISTANT PRINCIPAL'S OFFICE B	< 0.3			
11464337	136 ASSISTANT PRINCIPAL'S OFFICE C	0.7			
11464334	136 CONFERENCE ROOM	< 0.3			
11464321	136 MAIL	0.9			
11464340	136 PPW	< 0.3			
11464349	136 SCHOOL PSYCHOLOGIST	0.8			
11464336	136 SECRETARY'S OFFICE	< 0.3			
11464318	137 SOCIAL WORKER	< 0.3			
11464322	137A	< 0.3			
11464344	137B	< 0.3			
11464325	137C	< 0.3			
11464327	137D	< 0.3			
11464328	137D	< 0.3			
11464343	137D	0.5			
11464307	137E	< 0.3			
11464330	139 NURSE	< 0.3			
11464308	141 BUSINESS MANAGER	< 0.3			
11464301	141 FINANCIAL ASSISTANT	< 0.3			
11464315	141 SPECIAL ED CONFERENCE ROOM	< 0.3			
11464505	143 OFFICE	< 0.3			
11464565	154 OBSERVATORY	0.5			
11464557	171 COPY ROOM	< 0.3			
11464556	171 OFFICE	< 0.3			

	Table 1- Radon Testing Results				
Damascus High School					
Те	st Period: 01/30/2024 - 02/02/2024				
I					
Kit Number	Room / Area	Result			
11464561	171 WORKROOM	< 0.3			
11464559	171A	< 0.3			
11464543	182 OFFICE	< 0.3			
11464538	50C	< 0.3			
11464371	AUDITORIUM	0.7			
11464377	AUDITORIUM	< 0.3			
11464529	AUX GYM	< 0.3			
11464535	AUX GYM	< 0.3			
11464363	CAFETERIA	< 0.3			
11464376	CAFETERIA	< 0.3			
11464526	CONCESSION	< 0.3			
11464364	KITCHEN OFFICE	< 0.3			
11464531	MAIN GYM	< 0.3			
11464541	MAIN GYM	< 0.3			
11464527	MECHANICAL	< 0.3			
11464339	PRINCIPAL'S OFFICE	0.6			
11464375	STAFF LOUNGE	< 0.3			
11464390	STAGE	0.7			

		Table 2 - Su	ummary Tes	sting Results ≥2.	0 pCi/L		
			Damascus	High School			
		Test P	eriod: 01/30	)/2024 - 02/02/20	24		
≥2.0 and <2	.7 pCi/L	≥2.7 and <4	.0 pCi/L	≥4.0 and <8	3.0 pCi/l	≥8.0 pC	;i/L
Room / Area	Result	Room / Area	Result	Room / Area	Result	Room / Area	Result
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Tab	Table 3 - QC Radon Testing Results						
Таа	Damascus High School Test Period: 01/30/2024 - 02/02/2024						
Tes	t Period: 01	/30/2024 - 02/02/20	24				
Kit Number	QC Type	Room / Area	Result				
11464512	D	5	0.9				
11464540	D	52	< 0.3				
11464547	FB	52	< 0.3				
11464309	D	105	< 0.3				
11464345	FB	105	< 0.3				
11464372	D	112	< 0.3				
11464356	D	120	< 0.3				
11464310	D	132	1.3				
11464501	D	143	< 0.3				
11464502	FB	143	< 0.3				
11464517	D	165	< 0.3				
11464522	FB	165	< 0.3				
11464553	D	170	< 0.3				
11464536	D	183	< 0.3				
11464568	D	209	< 0.3				
11464567	FB	209	< 0.3				
11464306	D	102C	< 0.3				
11464341	D	136 assistant principals office	0.8				
11464343	D	137D	0.5				
11464327	FB	137D	< 0.3				

Table 4 - Sum	Table 4 - Summary of Invalid Measurement Locations							
	Damascus High	n School						
Te	st Period: 01/30/	24 - 02/02/24						
Kit Number	Room/Area	Result						
N/A	N/A	N/A						

Attachment 2: Laboratory Reports

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyze
1464520	01	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	$0.5 \pm 0.3$	2024-02-06
1464521	02	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464519	03	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	$1.1 \pm 0.3$	2024-02-06
1464513	04	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	$0.5 \pm 0.3$	2024-02-06
1464511	05	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	$0.9 \pm 0.3$	2024-02-06
1464512	05	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	$0.9 \pm 0.3$	2024-02-06
1464510	07	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464509	08	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	$0.5 \pm 0.3$	2024-02-06
1464508	09	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	$0.8 \pm 0.3$	2024-02-06
1464507	10	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	$0.5 \pm 0.3$	2024-02-06
1464346	102	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464358	102A	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464357	102B	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464306	102C	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464347	102C	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464351	103 CLASSROOM	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-0
1464350	103 OFFICE	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-0
1464352	103 SHOP	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-0
1464333	104 CLASSROOM	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-0
1464332	104 OFFICE	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-0
1464309	105	2024-01-30 @ 10:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-0
1464345	105	2024-01-30 @ 10:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464326	105	2024-01-30 @ 10:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-0
1464397	108	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-0
1464354	108A	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-0
1464353	108B	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464506	11	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464359	111	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464360	112	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464372	112	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464313	112	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	$0.5 \pm 0.3$	2024-02-00
1464314	112 OBSERVATORY	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464368	113	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464348	115	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464355	116	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464361	117	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464366	118	2024-01-30 @ 8:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06

# Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11464373	118 OFFICE	2024-01-30 @ 8:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464367	119	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464370	119A	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464369	119B	2024-01-30 @ 9:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464504	12	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	$0.7 \pm 0.3$	2024-02-06
11464365	120	2024-01-30 @ 8:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464356	120	2024-01-30 @ 8:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464374	121	2024-01-30 @ 8:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464319	130	2024-01-30 @ 11:00 am	2024-02-02 @ 8:00 am	< 0.3	2024-02-06
11464324	131	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	$0.6 \pm 0.3$	2024-02-06
11464310	132	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	$1.3 \pm 0.4$	2024-02-06
11464311	132	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	$1.3 \pm 0.4$	2024-02-06
11464317	133	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	$0.7 \pm 0.3$	2024-02-06
11464312	134	2024-01-30 @ 11:00 am	2024-02-02 @ 10:00 am	$1.5 \pm 0.4$	2024-02-06
11464323	135	2024-01-30 @ 10:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464320	135 OFFICE	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464335	136	2024-01-30 @ 10:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464341	136 ASSISTANT PRINCIPAL'S	2024-01-30 @ 10:00 am	2024-02-02 @ 11:00 am	$0.8 \pm 0.3$	2024-02-06
11464342	136 ASSISTANT PRINCIPAL'S OFFICE	2024-01-30 @ 10:00 am	2024-02-02 @ 11:00 am	$0.8 \pm 0.4$	2024-02-06
11464338	136 ASSISTANT PRINCIPAL'S OFFICE B	2024-01-30 @ 10:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464337	136 ASSISTANT PRINCIPAL'S OFFICE C	2024-01-30 @ 10:00 am	2024-02-02 @ 11:00 am	$0.7 \pm 0.3$	2024-02-06
11464334	136 CONFERENCE ROOM	2024-01-30 @ 10:00 am	2024-02-02 @ 10:00 am	< 0.3	2024-02-06
11464321	136 MAIL	2024-01-30 @ 10:00 am	2024-02-02 @ 11:00 am	$0.9 \pm 0.3$	2024-02-06
11464340	136 PPW	2024-01-30 @ 10:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464349	136 SCHOOL PSYCHOLOGIST	2024-01-30 @ 10:00 am	2024-02-02 @ 10:00 am	$0.8 \pm 0.3$	2024-02-06
11464336	<b>136 SECRETARY'S OFFICE</b>	2024-01-30 @ 10:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464329	137	2024-01-30 @ 10:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464318	137 SOCIAL WORKER		2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464322	137A		2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464344	137B	2024-01-30 @ 10:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464325	137C	2024-01-30 @ 10:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464327	137D		2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464343	137D		2024-02-02 @ 11:00 am	$0.5 \pm 0.3$	2024-02-06
11464328	137D		2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464307	137E		2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464316	138		2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464331	139	2024-01-30 @ 10:00 am	2024-02-02 @ 11:00 am	$0.7 \pm 0.3$	2024-02-06

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

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11464330	139 NURSE	2024-01-30 @ 10:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464302	140	2024-01-30 @ 11:00 am	2024-02-02 @ 10:00 am	< 0.3	2024-02-06
11464308	141 BUSINESS MANAGER	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464301	141 FINANCIAL ASSISTANT	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464315	141 SPECIAL ED CONFERENCE ROOM	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464303	142	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464502	143	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464503	143	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464501	143	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464505	143 OFFICE	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464304	144	2024-01-30 @ 11:00 am	2024-02-02 @ 10:00 am	$0.5 \pm 0.3$	2024-02-06
11464518	146	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	$0.7 \pm 0.3$	2024-02-06
11464514	149	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464562	154	2024-01-30 @ 1:00 pm	2024-02-02 @ 10:00 am	$1.0 \pm 0.4$	2024-02-06
11464565	154 OBSERVATORY	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	$0.5 \pm 0.3$	2024-02-06
11464560	158	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	$0.7 \pm 0.3$	2024-02-06
11464515	161	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464516	163	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464517	165	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464525	165	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464522	165	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464553	170	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464548	170	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464555	171	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464554	171	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464557	171 COPY ROOM	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464556	171 OFFICE	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464561	171 WORKROOM	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464559	171A	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464537	172	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464549	173	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464546	174	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464550	175	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464551	176	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464552	177	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
11464542	178	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	$0.5 \pm 0.3$	2024-02-06
11464534	180	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06

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

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyze
1464530	181	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464532	181	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464528	182	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464543	182 OFFICE	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464536	183	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464523	183	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464544	184	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	$0.5 \pm 0.3$	2024-02-06
1464563	205	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464569	209	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464567	209	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464568	209	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464533	214	2024-01-30 @ 2:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464566	224	2024-01-30 @ 2:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464573	235	2024-01-30 @ 2:00 pm	2024-02-02 @ 11:00 am	$0.6 \pm 0.3$	2024-02-00
1464564	242	2024-01-30 @ 2:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464545	50	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-0
1464538	50C	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-0
1464558	51	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	$1.0 \pm 0.3$	2024-02-0
1464540	52	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464539	52	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464547	52	2024-01-30 @ 1:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464377	AUDITORIUM	2024-01-30 @ 8:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-0
1464371	AUDITORIUM	2024-01-30 @ 8:00 am	2024-02-02 @ 11:00 am	$0.7 \pm 0.3$	2024-02-00
1464529	AUX GYM	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464535	AUX GYM	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464363	CAFETERIA	2024-01-30 @ 8:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464376	CAFETERIA	2024-01-30 @ 8:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464526	CONCESSION	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464364	KITCHEN OFFICE	2024-01-30 @ 8:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464531	MAIN GYM	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464541	MAIN GYM	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-00
1464527	MECHANICAL	2024-01-30 @ 12:00 pm	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464339	PRINCIPAL'S OFFICE	2024-01-30 @ 10:00 am	2024-02-02 @ 11:00 am	$0.6 \pm 0.3$	2024-02-00
1464375	STAFF LOUNGE	2024-01-30 @ 8:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06
1464390	STAGE	2024-01-30 @ 8:00 am	2024-02-02 @ 11:00 am	$0.7 \pm 0.3$	2024-02-06

#### Radon test result report for: OFFICE BLANK MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11633583	OB	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06

#### Radon test result report for: TRAVEL BLANK MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11633584	TB	2024-01-30 @ 11:00 am	2024-02-02 @ 11:00 am	< 0.3	2024-02-06

Radon test result report for: STORAGE KCI

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11635097	Storage	2024-01-07 @ 9:00 am	2024-01-11 @ 9:00 am	< 0.3	2024-01-15
	0				

# **EXPOSURE IN BOWSER-MORNER RADON CHAMBER**

CLIENT KCI TECHNOLOGIE	5. Inc Job Number 213327
NOMINAL Conditions: Radon Conc 49.5	pCi/L Rel. Hum <u>24.7</u> % Temp. <u>69.8</u> F
Date Start: 1/19/24 Date Stop: 1/22/24	Date Start: Date Stop:
Time Start: 2831 Time Stop: 2831	Time Start: Time Stop:
Device No.'s: (6) CHAR T3AGS -	Device No.'s:
11284003, 11284005, 11284006	
11294007, 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 μR/h Elevation = 820 ft

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

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



 $E\,\text{ngineers}\, \cdot\, P\,\text{lanners}\, \cdot\, S\,\text{cientists}\, \cdot\, C\,\text{onstruction}\,\, M\,\text{anagers}$ Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

# **Radon Test Kit Chain of Custody**

Project Name: MCPS Radon – Testing January 30th – February 2nd 2024

Name of Schools:

- 1. Damascus HS
- 2. Fairland ES
- 3. Jackson Road ES

- 4. Laytonsville ES
- 5. William Tyler Page ES
- 6. Cloverly ES

	Date	Initials
Radon Test Kits Deployed	01/30/2024	Jy
Radon Test Kits Collected	02/02/2024	m
Radon Test Kits Shipped to Lab*	02/02/2024	Th
Radon Test Kits Received by Lab*	02/06/2024	M

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

Attachment 3: Sampling Location Map



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

Site Name	Damascus High
	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	121
# Rooms $\geq$ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.1 pCi/L

### MCPS RADON TESTING – EXECUTIVE SUMMARY

Project Status: Initial testing completed; no further action needed.



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

April 6, 2022

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

Re:	<b>Radon Testing Services</b>
	KCI Job # 122108316
Location:	Damascus HS

Location: Damascus HS 25921 Ridge Rd. Damascus, MD 20872

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 Damascus HS, located at 25921 Ridge Rd. Damascus, MD 20871 (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 <a href="https://www.montgomeryschoolsmd.org">https://www.montgomeryschoolsmd.org</a> or <a href="https://www.montgomeryschoolsmd.org">www.epa.gov/radon</a>.

KCI visited the site on February 15, 2022 and deployed one hundred and thirty seven (137) 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 18, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc.

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

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

These tests represent:

• Follow-up to post-mitigation biennial testing.

These tests were conducted to:

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

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the 20s and high temperatures ranged from the high 30s to the high 40s Fahrenheit. Maximum sustained winds ranged from 5-18 miles per hour. Average humidity was around 15% with 1.5 inches of precipitation (rain) was recorded during testing period.

#### **Results:**

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

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
≥4.0 piC/L	None	N/A
<4.0 piC/L	See Attachn	nent B

Qu	ality 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 McCleaf

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

Attachments:

A- Floor Plan with Test LocationsB- Table 1-3, Radon Test Summary SpreadsheetsC- 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	
	Damascus HS	
Te	est Period: 02/15/2022 - 02/18/2022	
Kit Number	Room / Area	Result
11122636	1	< 0.3
11122637	2	< 0.3
11122640	2	< 0.3
11122662	2	< 0.3
11123894	3	< 0.3
11122663	4	< 0.3
11122678	5	< 0.3
11122671	7	< 0.3
11122680	8	< 0.3
11122688	9	< 0.3
11122681	10	< 0.3
11122631	11	< 0.3
11122630	12	0.5
11122620	51	< 0.3
11122623	52	< 0.3
11122604	102	< 0.3
11122605	102	< 0.3
11122606 11122608	102 102	< 0.3 < 0.3
11122608	102	< 0.3
11122674	103	< 0.3
11122689	103	< 0.3
11122600	105	< 0.3
11122611	108	< 0.3
11122690	108	< 0.3
11122699	108	< 0.3
11122673	111	< 0.3
11114407	112	< 0.3
11122683	113	< 0.3
11122682	114	< 0.3
11122687	115	< 0.3
11122622	116	1.1
11123896	117	< 0.3
11122664	118	< 0.3
11122676	119	< 0.3
11122686	119	< 0.3
11122617	120	< 0.3
11114423	121	< 0.3
11122659	130	< 0.3
11114403	131	< 0.3
11114404	132	0.6
11114401	133	< 0.3

	Table 1- Radon Testing Results	
	Damascus HS	
Τe	est Period: 02/15/2022 - 02/18/2022	
Kit Number	Room / Area	Result
11114425	133	< 0.3
11114405	134	0.8
11122624	135	< 0.3
11114415	136	< 0.3
11114420	136	< 0.3
11114422	136	< 0.3
11122602	137	< 0.3
11122642	138	< 0.3
11122656	140	< 0.3
11122646	142	< 0.3
11122649	144	< 0.3
11122645	145	< 0.3
11122657	145	< 0.3
11122658	145	< 0.3
11122672	146	< 0.3
11123878	154	< 0.3
11123885	154	0.5
11123888	158	< 0.3
11123895	158	< 0.3
11123897	158	< 0.3
11122644	161	< 0.3
11122643	163	< 0.3
11122650	165	< 0.3
11122651	165	< 0.3
11122696	170	< 0.3
11122677	171	< 0.3
11122684	171	< 0.3
11122652 11122695	172 173	< 0.3
11122695	173	< 0.3
11122670	174	< 0.3
11122685	175	< 0.3
11122648	176	< 0.3
11122614	177	< 0.3
11122634	178	< 0.3
11122607	178	< 0.3
11122625	180	< 0.3
11122023	180	< 0.3
11122609	180	< 0.3
11122612	181	< 0.3
11122633	181	< 0.3
11122641	183	< 0.3
	104	× 0.5

	Table 1- Radon Testing Results	
	Damascus HS	
Те	st Period: 02/15/2022 - 02/18/2022	
Kit Number	Room / Area	Result
11123899	207	< 0.3
11122615	212	< 0.3
11123861	218	< 0.3
11123886	218	< 0.3
11122628	224	< 0.3
11122629	233	< 0.3
11122618	238	< 0.3
11122666	103 CLASSROOM	< 0.3
11122679	103 OFFICE	< 0.3
11122667	104 OFFICE	< 0.3
11122675	104 OFFICE	< 0.3
11122668	108 OFFICE	< 0.3
11114406	112 COMPUTER ROOM	1.1
11122665	118 OFFICE	< 0.3
11122619	135 OFFICE	< 0.3
11122693	136 ADMIN SECRETARY	< 0.3
11114416	136 ASSISTANT PRINCIPAL	< 0.3
11114418	136 ASSISTANT PRINCIPAL	< 0.3
11114421	136 ATTENDANCE	< 0.3
11122692	136 CONFERENCE	0.5
11114419	136 OFFICE	< 0.3
11114410	136 PRINCIPAL	0.6
11114402	137 OFFICE	< 0.3
11114409	137 OFFICE	< 0.3
11114417	137 OFFICE	< 0.3
11114424	137 OFFICE	< 0.3
11122601	137 OFFICE	< 0.3
11122603	137 OFFICE	< 0.3
11122647	144 OFFICE	< 0.3
11122660	171 OFFICE	< 0.3
11122698	171 OFFICE	< 0.3
11122653	171 WORK ROOM	< 0.3
11122661	171 WORK ROOM	< 0.3
11122632	50C	< 0.3
11122697	AUDITORIUM	0.5
11122700	AUDITORIUM	0.5
11122610	AUX GYM	< 0.3
11122613	AUX GYM	< 0.3
11123900	BUILDING SERVICES MANAGER	0.6
11122654	BUSINESS MANAGER	< 0.3
11114412	CAFETERIA	< 0.3
11122694	CAFETERIA	< 0.3

	Damascus HS	
Test	Period: 02/15/2022 - 02/18/202	2
Kit Number	Room / Area	Result
11122655	FINANCIAL ASSISTANT	< 0.3
11122627	GIRLS LOCKER ROOM	< 0.3
11114408	HEALTH ROOM	0.7
11114414	HR ASSISTANT PRINCIPAL	< 0.3
11122691	KITCHEN OFFICE	< 0.3
11122626	MAIN GYM	< 0.3
11122635	MAIN GYM	< 0.3
11114413	NURSE	< 0.3
11122639	SPECIAL ED CONFERENCE	< 0.3
11114411	STAFF LOUNGE	< 0.3
11123893	TECH BOOTH	< 0.3

Table 2- Radon Testing Results						
Damascus HS						
	Test Period: 02/15	/2022 - 02/18/2022				
Kit Number	QC Type	Room / Area	Result			
11114420	D	136	< 0.3			
11114422	FB	136	< 0.3			
11114401	D	133	< 0.3			
11122605	D	102	< 0.3			
11122675	D	104 office	< 0.3			
11122676	D	119	< 0.3			
11122653	D	171 work room	< 0.3			
11122651	FB	165	< 0.3			
11122657	D	145	< 0.3			
11122658	FB	145	< 0.3			
11122662	D	2	< 0.3			
11122634	D	178	< 0.3			
11122625	D	180	< 0.3			
11123886	D	218	< 0.3			
11123895	D	158	< 0.3			
11123897	FB	158	< 0.3			
11131660	OB	OFFICE BLANK	< 0.3			
11131661	ТВ	TRAVEL BLANK	< 0.3			

	Summary of Missed Locations					
Damascus HS						
Т	est Period: 02/15/22 - 02/18/22					
Kit Number	Room/Area	Result				
	NA					

Summary	Summary of Missing, Compromised and >/= 4 piC/L Tests					
Damascus HS						
	Test Period: 02/15/22 - 02/18/22					
Kit Number	Room/Area	Result				
	NA					

Table Note:

\* Missing or Compromised Sample

# ATTACHMENT C

# Laboratory Analytical Results

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11122636	1	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122681	10	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122608	102	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122606	102	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122605	102	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122604	102	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122669	103	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122674	103	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122666	103 CLASSROOM	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122679	103 OFFICE	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122689	104	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122667	104 OFFICE	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122675	104 OFFICE	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122621	105	2022-02-15 @ 1:00 pm	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122699	108	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122611	108	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122690	108	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122668	108 OFFICE	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122631	11	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122673	111	2022-02-15 @ 10:00 am	2022-02-18 @ 11:00 am	< 0.3	2022-02-22
11114407	112	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11114406	112 COMPUTER ROOM	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	$1.1 \pm 0.3$	2022-02-22
11122683	113	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122682	114	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122687	115	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122622	116	2022-02-15 @ 1:00 pm	2022-02-18 @ 9:00 am	$1.1 \pm 0.3$	2022-02-22
11123896	117	2022-02-15 @ 1:00 pm	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122664	118	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122665	118 OFFICE	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122686	119	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122676	119	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122630	12	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	$0.5 \pm 0.3$	2022-02-22
11122617	120	2022-02-15 @ 1:00 pm	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11114423	121	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122659	130	2022-02-15 @ 10:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-22
11114403	131	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11114404	132	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	$0.6 \pm 0.3$	2022-02-22

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11114401	133	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-2
11114425	133	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-2
11114405	134	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	$0.8 \pm 0.3$	2022-02-2
11122624	135	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-2
11122619	135 OFFICE	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-2
11114415	136	2022-02-15 @ 8:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-2
11114422	136	2022-02-15 @ 8:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-2
11114420	136	2022-02-15 @ 8:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-2
11122693	136 ADMIN SECRETARY	2022-02-15 @ 9:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-2
11114418	136 ASSISTANT PRINCIPAL	2022-02-15 @ 8:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-2
11114416	136 ASSISTANT PRINCIPAL	2022-02-15 @ 8:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-2
11114421	136 ATTENDANCE	2022-02-15 @ 8:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-2
11122692	<b>136 CONFERENCE</b>	2022-02-15 @ 9:00 am	2022-02-18 @ 8:00 am	$0.5 \pm 0.3$	2022-02-2
11114419	136 OFFICE	2022-02-15 @ 8:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-2
11114410	136 PRINCIPAL	2022-02-15 @ 9:00 am	2022-02-18 @ 8:00 am	$0.6 \pm 0.3$	2022-02-2
11122602	137	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-2
11122601	137 OFFICE	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-2
11114402	137 OFFICE	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-2
11114417	137 OFFICE	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-2
11122603	137 OFFICE	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-2
11114424	137 OFFICE	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-2
11114409	137 OFFICE	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-2
11122642	138	2022-02-15 @ 11:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-2
11122656	140	2022-02-15 @ 11:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-2
11122646	142	2022-02-15 @ 11:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-2
11122649	144	2022-02-15 @ 11:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-2
11122647	144 OFFICE	2022-02-15 @ 11:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-2
11122657	145	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-2
11122658	145	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-2
11122645	145	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-2
11122672	146	2022-02-15 @ 11:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-2
11123878	154	2022-02-15 @ 1:00 pm	2022-02-18 @ 11:00 am	< 0.3	2022-02-2
11123885	154	2022-02-15 @ 1:00 pm	2022-02-18 @ 11:00 am	$0.5 \pm 0.3$	2022-02-2
11123895	158	2022-02-15 @ 1:00 pm	2022-02-18 @ 10:00 am	< 0.3	2022-02-2
11123888	158	2022-02-15 @ 1:00 pm	2022-02-18 @ 10:00 am	< 0.3	2022-02-2
11123897	158	2022-02-15 @ 1:00 pm	2022-02-18 @ 10:00 am	< 0.3	2022-02-2
11122644	161	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-2

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11122643	163	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122651	165	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122650	165	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122696	170	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122677	171	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122684	171	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122660	171 OFFICE	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122698	171 OFFICE	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122661	171 WORK ROOM	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122653	171 WORK ROOM	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122652	172	2022-02-15 @ 10:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122695	173	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122670	174	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122685	175	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122648	176	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122614	177	2022-02-15 @ 12:00 pm	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122638	178	2022-02-15 @ 12:00 pm	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122634	178	2022-02-15 @ 12:00 pm	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122609	181	2022-02-15 @ 12:00 pm	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122612	181	2022-02-15 @ 12:00 pm	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122633	183	2022-02-15 @ 12:00 pm	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122641	184	2022-02-15 @ 12:00 pm	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122637	2	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122640	2	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122662	2	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11123899	207	2022-02-15 @ 12:00 pm	2022-02-18 @ 11:00 am	< 0.3	2022-02-22
11122615	212	2022-02-15 @ 12:00 pm	2022-02-18 @ 11:00 am	< 0.3	2022-02-22
11123886	218	2022-02-15 @ 1:00 pm	2022-02-18 @ 11:00 am	< 0.3	2022-02-22
11123861	218	2022-02-15 @ 1:00 pm	2022-02-18 @ 11:00 am	< 0.3	2022-02-22
11122628	224	2022-02-15 @ 1:00 pm	2022-02-18 @ 11:00 am	< 0.3	2022-02-22
11122629	233	2022-02-15 @ 12:00 pm	2022-02-18 @ 11:00 am	< 0.3	2022-02-22
11122618	238	2022-02-15 @ 12:00 pm	2022-02-18 @ 11:00 am	< 0.3	2022-02-22
11123894	3	2022-02-15 @ 1:00 pm	2022-02-18 @ 11:00 am	< 0.3	2022-02-22
11122663	4	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122678	5	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122632	50C	2022-02-15 @ 12:00 pm	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122620	51	2022-02-15 @ 12:00 pm	2022-02-18 @ 10:00 am	< 0.3	2022-02-22

		Started	Ended	pCi/L	Analyzed
11122623	52	2022-02-15 @ 12:00 pm	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122671	7	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122680	8	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122688	9	2022-02-15 @ 11:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122700	AUDITORIUM	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	$0.5 \pm 0.3$	2022-02-22
11122697	AUDITORIUM	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	$0.5 \pm 0.3$	2022-02-22
11122613	AUX GYM	2022-02-15 @ 12:00 pm	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122610	AUX GYM	2022-02-15 @ 12:00 pm	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11123900 BU	ILDING SERVICES MANAGER	2022-02-15 @ 1:00 pm	2022-02-18 @ 8:00 am	$0.6 \pm 0.3$	2022-02-22
11122654	BUSINESS MANAGER	2022-02-15 @ 11:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-22
11114412	CAFETERIA	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122694	CAFETERIA	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122655	FINANCIAL ASSISTANT	2022-02-15 @ 11:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-22
11122627	GIRLS LOCKER ROOM	2022-02-15 @ 12:00 pm	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11114408	HEALTH ROOM	2022-02-15 @ 9:00 am	2022-02-18 @ 8:00 am	$0.7 \pm 0.3$	2022-02-22
11114414	HR ASSISTANT PRINCIPAL	2022-02-15 @ 9:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-22
11122691	KITCHEN OFFICE	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122635	MAIN GYM	2022-02-15 @ 12:00 pm	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122626	MAIN GYM	2022-02-15 @ 12:00 pm	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11114413	NURSE	2022-02-15 @ 9:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-22
11122639	SPECIAL ED CONFERENCE	2022-02-15 @ 11:00 am	2022-02-18 @ 8:00 am	< 0.3	2022-02-22
11114411	STAFF LOUNGE	2022-02-15 @ 9:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11123893	TECH BOOTH	2022-02-15 @ 1:00 pm	2022-02-18 @ 9:00 am	< 0.3	2022-02-22

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

Radon test result report for: DAMASCUS HS MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11122607	180	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122625	180	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11123887	180	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22

<b>EXPOSURE IN BOWSER</b>	MORNER RADON CHAMBER	
CLIENT KCI Technologies	Inc. Job Number 204186	-
	_pCi/L Rel. Hum <u>59.1</u> % Temp. <u>79.9</u>	
Date Start: <u>a / 18 / 22</u> Date Stop: <u>2/a / a</u>	a Date Start: Date Stop:	
	_ Time Start: Time Stop:	
Device No.'s: (3) Char Bags-	Device No.'s:	
11113484, 11122998, 20107126		
23 Right		
	Date Start: Date Stop:	
Time Start: Time Stop:	Time Start: Time Stop:	
Device No.'s:	Device No.'s:	
	æ	
00) 20		
Date Start: Date Stop:	Date Start: Date Stop:	
Time Start: Time Stop:	Time Start: Time Stop:	
Device No.'s:	Device No.'s:	
	9 1	1.00
	*	

( \_\_\_\_

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

March 14, 2022

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

Pg 1 of 1

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

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



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

## Radon Test Kit Chain of Custody

Project Name: MCPS Radon – February 2022 Schools

Name of Schools:

- 1. Damascus HS
- 2. Germantown ES
- 3. Great Seneca Creek ES
- 4. Lake Seneca ES
- 5. S. Christa McAuliffe ES
- 6. Northwest HS
- 7. Waters Landing ES
- 8. Seneca Valley HS
- 9. Cedar Grove ES
- 10.Capt. James E. Daly ES
- 11.Neelsville MS
- 12.Dr. Sally K. Ride ES

	Date	Initials
Radon Test Kits Deployed	02/15/2022	and
Radon Test Kits Collected	02/18/2022	OM
Radon Test Kits Shipped to Lab*	02/18/2022	100
Radon Test Kits Received by Lab*	02/21/2022	m

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



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

Site Name	Damascus High School
Date of Report	2/28/2020
Round of Testing	Initial
(	Follow-up
	Post Remediation
	2 year testing
	5 year testing
	HVAC Upgrade
	Window Replacement
	New Addition
	New Facility
# of Rooms Tested	5
# Rooms ≥4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.3 pCi/L

### MCPS RADON TESTING - EXECUTIVE SUMMARY

#### **Project Status**

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



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

2/28/2020

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

Re: Radon Testing Services

KCI Job #1214634188

Location: Damascus High School 25921 Ridge Road Damascus, Maryland 20872

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools pursuant to completing a "short-term" 3-day radon test for the Damascus High School, located at 25921 Ridge Road in Damascus, Maryland 20872 (subject site).

#### SCOPE OF SERVICES

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

KCI visited the site on 2/3/2020 and deployed nine (9) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

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

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

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

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

KCI returned to the site on 2/6/2020 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a NRSB certified analytical laboratory for radon analysis (certification #ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

### **EVALUATION OF TESTING CONDITIONS**

These tests represent:

• Follow-up to initial testing.

These tests were conducted to:

• Evaluate radon concentrations at the facility.

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures ranged from the mid-30s to the low-50s; and high temperatures ranged from the upper-40s to the mid-60s. Maximum sustained winds ranged from 13-21 miles per hour. Average humidity was approximately 76%. A total of 1.09 Inches of rain were recorded during the testing period. The weather conditions during the testing period may have resulted in atypical radon test results for this facility.

#### **RESULTS**

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

The results of the radon test analysis indicated the following:

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

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

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

Sincerely,

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

Attachments:

A- Floor Plan with Test Locations

B - Tables 1-3, Radon Test Summary Spreadsheets

C- Laboratory Analytical Results

# ATTACHMENT A

Floor Plan With Test Locations

<u>Floor Plan Legend</u> X-Sample Location (in red) X- Previous Sample Location 1- Not Samled; No Ground Contact 2- Not Samled: Uncorpusied (or g. Store

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

3- Not Samled; High Humidity/Moisture

4- Not Samled; Bathroom/Hallway

# ATTACHMENT B

Radon Test Summary Spreadsheet

### Table Notes:

- AC- Activated Charcoal
- ACI- Air Chek, Inc.
- D- Duplicate
- FB- Field Blank
- KCI- KCI Technologies, Inc.
- **OB- Office Blank**
- PM- Project Manager
- QC- Quality Control

Table 1- Radon Testing Results					
Damascus High School					
Test Period: 02/03/20-02/06/20					
Kit Number	Room / Area	Result			
9339967	OUTSIDE FOOD STAND	1			
9339970	OUTSIDE FOOD STAND	< 0.3			
9339972	2	0.7			
9339976	9339976 OUTSIDE FOOD STAND				
9339977	163	< 0.3			
9339978	147	0.7			
9339982	232	< 0.3			
9334909	OFFICE BLANK	<0.3			
9334910	OFFICE BLANK	<0.3			

Table 2- Radon Testing Results				
Damascus High School				
Test Period: 02/03/20-02/06/20				
Kit Number	QC Type	Room / Area	Result	
9339976	D	OUTSIDE FOOD STAND	1.3	
9339970	FB	OUTSIDE FOOD STAND	<0.3	
9334902	TRANSIT BLANK	NA	<0.3	

# ATTACHMENT C

Laboratory Analytical Results

February 28, 2020

	00 am 2	2020-02-06	9:00 am 9:00 am	70 70		MAIN	OUTSIDE FOOD STAND	DAMASCUS HS	1	1.0
			9:00 am	70						
0-02-03 10:0	)0 am 7						OUTSIDE FOOD STAND	DAMASCUS HS	1	< 0.3
		2020-02-06	10:00 am	70		MAIN	2	DAMASCUS HS	1	0.7
0-02-03 10:0	00 am 2	2020-02-06	9:00 am	70			OUTSIDE FOOD STAND	DAMASCUS HS	1	1.3
0-02-03 10:0	00 am 2	2020-02-06	12:00 pm	70		MAIN	163	DAMASCUS HS	1	< 0.3
0-02-03 10:0	00 am 2	2020-02-06	9:00 am	70		MAIN	147	DAMASCUS HS	1	0.7
0-02-03 10:0	00 am 2	2020-02-06	9:00 am	70		MAIN	232	DAMASCUS HS	1	< 0.3
)- )-	02-03 10:0 02-03 10:0	02-03 10:00 am 02-03 10:00 am	02-03         10:00 am         2020-02-06           02-03         10:00 am         2020-02-06	02-03         10:00 am         2020-02-06         12:00 pm           02-03         10:00 am         2020-02-06         9:00 am	02-03         10:00 am         2020-02-06         12:00 pm         70           02-03         10:00 am         2020-02-06         9:00 am         70	02-03         10:00 am         2020-02-06         12:00 pm         70           02-03         10:00 am         2020-02-06         9:00 am         70	02-03         10:00 am         2020-02-06         12:00 pm         70         MAIN           02-03         10:00 am         2020-02-06         9:00 am         70         MAIN	02-03         10:00 am         2020-02-06         12:00 pm         70         MAIN         163           02-03         10:00 am         2020-02-06         9:00 am         70         MAIN         147	02-03         10:00 am         2020-02-06         12:00 pm         70         MAIN         163         DAMASCUS HS           02-03         10:00 am         2020-02-06         9:00 am         70         MAIN         147         DAMASCUS HS	02-03         10:00 am         2020-02-06         12:00 pm         70         MAIN         163         DAMASCUS HS         1           02-03         10:00 am         2020-02-06         9:00 am         70         MAIN         147         DAMASCUS HS         1

<b>EXPOSURE IN BOWSER-</b>	MORNER RADON CHAMBER
CLIENT KCI Technolog	gies, Inc. Job Number 194523
-	_pCi/L Rel. Hum <u>49.8</u> % Temp. <u>70.2</u> F
Date Start: 2/21/20 Date Stop: 2/24/2	20 Date Start: Date Stop:
Time Start: 0745 Time Stop: 0745	Time Start: Time Stop:
	Device No.'s:
9341725 thru 9341733	
52 Left	
Date Start: Date Stop:	Date Start: Date Stop:
Time Start: Time Stop:	Time Start: Time Stop:
Device No.'s:	Device No.'s:
е	
Date Start: Date Stop:	Date Start: Date Stop:
Time Start: Time Stop:	Time Start: Time Stop:
Device No.'s:	Device No.'s:

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

February 28, 2020

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

Radon test result report for:

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

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



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

## Radon Test Kit Chain of Custody

Project Name: MCPS Radon 2019 Week 1 Retesting

Name of Schools:

- 1. Belmont E.S.
- 2. Clarksburg H.S.
- 3. Damascus E.S.
- 4. Damascus H.S.
- 5. DuFief E.S.
- 6. Fields Road E.S.
- 7. Gaithersburg E.S.
- 8. McAuliffe E.S.
- 9. Quince Orchard H.S.
- 10. Snowden Farms E.S.
- 11. South Lake E.S.
- 12. Stone Mill E.S.
- 13. Travilah ES
- 14. Watkins Mill ES
- 15. Whitman H.S.

	Date	Initials
Dedew Test Kite Developed	02/03/20 to	
Radon Test Kits Deployed	02/04/20	(JIV)
Radon Test Kits Collected	02/06/20 to	ma
Radon Test Kits Collected	02/07/20	
Radon Test Kits Shipped to Lab*	02/07/20	for
Radon Test Kits Received by Lab*	02/10/20	XM

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



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

Site Name	Damascus High School
Date of Report	1/28/2020
Round of Testing	Initial
	Follow-up
(	Post Remediation
	2 year testing
	5 year testing
(	HVAC Upgrade
	Window Replacement
	New Addition
	New Facility
# of Rooms Tested	118
# Rooms ≥4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	2.1 pCi/L

#### MCPS RADON TESTING - EXECUTIVE SUMMARY

### **Project Status**

Current Project Status at this time: Testing Complete; missing/compromised tests to be sampled.



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

1/28/2020

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

Re: Radon Testing Services

KCI Job #12146341126

Location: Damascus High School 25921 Ridge Road Damascus, Maryland 20872

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools pursuant to completing a "short-term" 3-day radon test for the Damascus High School, located at 25921 Ridge Road in Damascus, Maryland 20872 (subject site).

#### SCOPE OF SERVICES

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

KCI visited the site on 12/9/2019 and deployed one-hundred and seventy-two (172) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

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

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

### **EVALUATION OF TESTING CONDITIONS**

These tests represent:

• Follow-up to post-mitigation biennial testingand HVAC upgrade testing.

These tests were conducted to:

• Evaluate radon concentrations following the installation of a new HVAC system and confirm the success of the mitigation system(s).

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

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

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

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

#### RESULTS

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

The results of the radon test analysis indicated the following:

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

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

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

Sincerely,

Mr. Tyler P. McCleaf Radon Measurement Provider 111004 RT

KCI Technologies, Inc.

Attachments:

A- Floor Plan with Test Locations

B - Tables 1-3, Radon Test Summary Spreadsheets

C- Laboratory Analytical Results

# ATTACHMENT A

Floor Plan With Test Locations

# ATTACHMENT B

Radon Test Summary Spreadsheet

### Table Notes:

- AC- Activated Charcoal
- ACI- Air Chek, Inc.
- D- Duplicate
- FB- Field Blank
- KCI- KCI Technologies, Inc.
- **OB- Office Blank**
- PM- Project Manager
- QC- Quality Control

	Table 1- Radon Testing Results				
	Damascus High School				
	Test Period: 12/9/2019-12/12/2019				
		Durali			
Kit Number	Room / Area	Result			
9333801	3	0.7			
9333802	3	0.8			
9333803 9333804	1	< 0.3 0.8			
	4 7	0.8 < 0.3			
9333806	5	< 0.3 1.2			
9333807					
9333808	10	0.5			
9333809	10	< 0.3			
9333810	11	< 0.3			
9333811	8	< 0.3			
9333812	9	0.8			
9333813	11	< 0.3			
9333814	12	1			
9333815	145	1			
9333816	147	< 0.3			
9333817	149	< 0.3			
9333818	151	< 0.3			
9333819	1510	0.5			
9333820	153	< 0.3			
9333821	155	< 0.3			
9333822	157	< 0.3			
9333823	155W	< 0.3			
9333824	159	< 0.3			
9333825	1550	< 0.3			
9333826	165	< 0.3			
9333827	165	< 0.3			
9333828	161	< 0.3			
9333829	158	< 0.3			
9333830	156	< 0.3			
9333831	TV AUDIO	< 0.3			
9333832	154	< 0.3			
9333833	MEDIA CENTER WORKROOM	< 0.3			
9333834	TV CONTROL	< 0.3			
9333835	MEDIA CENTER OFFICE 1	< 0.3			
9333836	MEDIA CENTER	< 0.3			
9333837	170	< 0.3			
9333838	170	< 0.3			
9333839	MEDIA CENTER	< 0.3			
9333840	MEDIA CENTER	< 0.3			
9333841	MEDIA CENTER	0.5			
9333842	MEDIA CENTER OFFICE 2	< 0.3			
9333843	172	< 0.3			
9333844	174	< 0.3			
9333845	176	0.6			
9333846	180	< 0.3			
9333847	175	< 0.3			
9333848	178	< 0.3			
9333849	173	< 0.3			
9333850	184	< 0.3			
9333851	GIRLS LOCKER OFFICE	< 0.3			

0222052	190	< 0.2
9333852		< 0.3
9333853 9333854	MAIN GYM MAIN GYM	< 0.3 < 0.3
9333855	MAIN GYM	< 0.3
	AUX GYM	
9333856		< 0.3
9333857	AUX GYM	< 0.3
9333858	AUX GYM	< 0.3
9333859	MAIN GYM	< 0.3
9333860	AUX GYM	< 0.3
9333861	183	< 0.3
9333862	183	< 0.3
9333863	183	< 0.3
9333864	181	< 0.3
9333865	134	0.7
9333866	177	< 0.3
9333867	181	< 0.3
9333868	52	< 0.3
9333869	133	< 0.3
9333870	131	0.7
9333871	51	0.9
9333872	177	< 0.3
9333873	50C	0.6
9333874	50C	< 0.3
9333875	132	0.7
9333876	130	< 0.3
9333877	130	< 0.3
9333878	142	0.6
9333879	144	1
9333880	142	0.6
9333881	138	< 0.3
9333882	144 OFFICE	0.7
9333883	141 BUSINESS	0.7
9333884	146	< 0.3
9333885	140	0.7
9333886	138	< 0.3
9333887	139	1
9333888	141 BUSINESS	0.6
9333889	141 CONFERENCE	< 0.3
9333890	143 OFFICE	1.5
9333891	136 ATTENDANCE	< 0.3
9333892	141 FINANCIAL	0.6
9333893	146	0.7
9333894	ASSISTANT PRINCIPAL	0.8
9333895	148	1
9333896	NURSE	0.9
9333897	136 ASSISTANT PRINCIPAL 1	1.1
9333898	136 ASSISTANT PRINCIPAL 2	< 0.3
9333899	136 OFFICE	0.5
9333900	ASSISTANT PRINCIPAL	< 0.3
9333901	136	< 0.3
9333902	136	0.6
9333903	136	< 0.3
9333904	137 OFFICE 2	< 0.3
0222005		
9333905	136 PRINCIPAL	0.7

9333907 $136$ CONFERENCE $1.1$ $9333908$ $136$ ADMIN $0.9$ $9333909$ $137$ OFFICE 2 $< 0.3$ $9333910$ $137$ OFFICE 6 $< 0.3$ $9333911$ $137$ OFFICE 6 $< 0.3$ $9333912$ $137$ OFFICE 6 $< 0.3$ $9333912$ $137$ OFFICE 5 $< 0.3$ $9333913$ $137$ OFFICE 5 $< 0.3$ $9333914$ $137$ OFFICE 1 $< 0.3$ $9333915$ $137$ OFFICE 1 $< 0.3$ $9333916$ $118$ OFFICE $< 0.3$ $9333917$ $119$ $< 0.3$ $9333918$ $118$ $0.5$ $9333920$ $135$ OFFICE $< 0.3$ $9333921$ $135$ $< 0.3$ $9333923$ $112$ $2.1$ $9333924$ $114$ $< 0.3$ $9333926$ $114$ $0.5$	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	3 3 3 3 3 3 3
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	3 3 3 3 3 3
9333913         137 OFFICE 5         < 0.3           9333914         137 OFFICE 3         < 0.3	3 3 3 3 3 3
9333914         137 OFFICE 3         < 0.3           9333915         137 OFFICE 1         < 0.3	3 3 3 3
9333915         137 OFFICE 1         < 0.3           9333916         118 OFFICE         < 0.3	3 3 3 3
9333916         118 OFFICE         < 0.3           9333917         119         < 0.3	3 3 3 3
9333917         119         < 0.3           9333918         118         0.5           9333919         118         0.5           9333920         135 OFFICE         < 0.3	3
9333918         118         0.5           9333919         118         0.5           9333920         135 OFFICE         < 0.3	3
9333919         118         0.5           9333920         135 OFFICE         < 0.3	}
9333920         135 OFFICE         < 0.3           9333921         135         < 0.3	}
9333921         135         < 0.3           9333922         119         < 0.3	}
9333922         119         < 0.3           9333923         112         2.1           9333924         114         < 0.3	
9333923         112         2.1           9333924         114         < 0.3	
9333924         114         < 0.3           9333925         119         < 0.3	
9333925 119 < 0.3	3
9333927 112 OBSERVATION 1.1	
9333928 111 < 0.3	3
9333929 115 0.6	
9333930 111 0.6	
9333931 116 < 0.3	3
9333932 117 0.6	-
9333933 108 OFFICE < 0.3	3
9333934 105 < 0.3	
9333935 108 < 0.3	
9333936 108 < 0.3	
9333937 111 0.6	
9333938 105 < 0.3	3
9333939 103 CLASSROOM < 0.3	3
9333940 104 OFFICE < 0.3	
9333941 103 OFFICE < 0.3	3
9333942 103 < 0.3	3
9333943 102A < 0.3	3
9333944 104 < 0.3	3
9333945 105 < 0.3	3
9333946 AUDITORIUM < 0.3	}
9333947 103 0.5	
9333948 AUDITORIUM 1	
9333949 102B < 0.3	3
9333950 102 < 0.3	}
9333951 CAFETERIA 1.1	
9333952 CAFETERIA 0.9	
9333953 CAFETERIA 0.7	
9333954 CAFETERIA 1.2	
9333955 AUDITORIUM 1.1	
9333956 AUDITORIUM 1.1	
9333957 CAFETERIA 0.9	
9333958 120 0.9	
9333959 120 0.7	
9333960 121 0.7	
9333961 AUDITORIUM 1	

9333962	121	0.6
9333963	213	< 0.3
9333965	235	< 0.3
9333966	235	< 0.3
9333967	219	< 0.3
9333968	121	< 0.3
9333969	242	< 0.3
9333970	207	< 0.3
9333971	CAFETERIA LOUNGE	1
9333973	242	< 0.3
9333974	209	< 0.3
9334977	OFFICE BLANK	< 0.3
9333805	2	MISSING
9333964	232	MISSING

Table 2- Radon Testing Results							
	Damascus High School						
	Test Period: 12/9/2019-12/12/2019						
Kit Number	QC Type	Room / Area	Result				
9333801	D	3	0.7				
9333809	FB	10	<0.3				
9333813	D	11	<0.3				
9333827	D	165	<0.3				
9333840	FB	MEDIA CENTER	<0.3				
9333837	D	170	<0.3				
9333846	D	180	<0.3				
9333858	FB	AUX GYM	<0.3				
9333863	D	183	<0.3				
9333874	D	50C	<0.3				
9333876	D	130	<0.3				
9333886	FB	138	<0.3				
9333878	D	142	0.6				
9333884	FB	146	<0.3				
9333888	D	141 BUSINESS	0.6				
9333900	FB	ASSISTANT PRINCIPAL	<0.3				
9333901	D	136	<0.3				
9333904	D	137 OFFICE 2	<0.3				
9333912	FB	137 OFFICE 6	<0.3				
9333925	D	119	<0.3				
9333926	D	114	0.5				
9333937	D	111	0.6				
9333938	D	105	<0.3				
9333945	FB	105	<0.3				
9333951	D	CAFETERIA	1.1				
9333946	FB	AUDITORIUM	<0.3				
9333962	D	121	0.6				
9333966	D	235	<0.3				
9333969	FB	242	<0.3				
9334850	TRANSIT BLANK	NA	< 0.3				
9334914	TRANSIT BLANK	NA	< 0.3				
9334916	TRANSIT BLANK	NA	< 0.3				
9334963	TRANSIT BLANK	NA	< 0.3				

Summary of Missed Locations						
	Damascus High School					
	Test Period: 12/9/2019 - 12/12/2019					
Kit Number	Room/Area	Result				
	NA					

Summary of Missing, Compromised and >/= 4 piC/L Tests							
	Damascus High School						
Test Period: 12/9/2019-12/12/2019							
Kit Number	Room/Area	Result					
9333805	*2	Missing					
9333964	*232	Missing					

Table Note:

\* Missing or Compromised Sample

# ATTACHMENT C

Laboratory Analytical Results

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

#### Radon test result report for: DAMASCUS HS MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9333803	01	2019-12-09 @ 8:00 am	2019-12-12 @ 9:00 am	< 0.3	2019-12-16
9333802	03	2019-12-09 @ 8:00 am	2019-12-12 @ 9:00 am	$0.8 \pm 0.4$	2019-12-17
9333801	03	2019-12-09 @ 8:00 am	2019-12-12 @ 9:00 am	$0.7 \pm 0.4$	2019-12-17
9333804	04	2019-12-09 @ 8:00 am	2019-12-12 @ 9:00 am	$0.8 \pm 0.3$	2019-12-16
9333807	05	2019-12-09 @ 8:00 am	2019-12-12 @ 9:00 am	$1.2 \pm 0.4$	2019-12-16
9333806	07	2019-12-09 @ 8:00 am	2019-12-12 @ 9:00 am	< 0.3	2019-12-17
9333811	08	2019-12-09 @ 8:00 am	2019-12-12 @ 9:00 am	< 0.3	2019-12-16
9333812	09	2019-12-09 @ 8:00 am	2019-12-12 @ 9:00 am	$0.8 \pm 0.3$	2019-12-16
9333808	10	2019-12-09 @ 8:00 am	2019-12-12 @ 10:00 am	$0.5 \pm 0.3$	2019-12-16
9333809	10	2019-12-09 @ 8:00 am	2019-12-12 @ 10:00 am	< 0.3	2019-12-16
9333950	102	2019-12-09 @ 2:00 pm	2019-12-12 @ 12:00 pm	< 0.3	2019-12-16
9333943	102A	2019-12-09 @ 2:00 pm	2019-12-12 @ 12:00 pm	< 0.3	2019-12-16
9333949	102B	2019-12-09 @ 2:00 pm	2019-12-12 @ 12:00 pm	< 0.3	2019-12-16
9333942	103	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-16
9333947	103	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	$0.5 \pm 0.4$	2019-12-16
9333939	103 CLASSROOM	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-16
9333941	103 OFFICE	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-16
9333944	104	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-17
9333940	104 OFFICE	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-16
9333945	105	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-16
9333938	105	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-16
9333934	105	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-16
9333935	108	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-16
9333936	108	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-16
9333933	108 OFFICE	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-16
9333810	11	2019-12-09 @ 8:00 am	2019-12-12 @ 10:00 am	< 0.3	2019-12-17
9333813	11	2019-12-09 @ 8:00 am	2019-12-12 @ 10:00 am	< 0.3	2019-12-17
9333937	111	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	$0.6 \pm 0.3$	2019-12-16
9333930	111	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	$0.6 \pm 0.4$	2019-12-17
9333928	111	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	< 0.3	2019-12-17
9333923	112	2019-12-09 @ 1:00 pm	2019-12-12 @ 11:00 am	$2.1 \pm 0.4$	2019-12-16
9333927	112 OBSERVATION	2019-12-09 @ 1:00 pm	2019-12-12 @ 11:00 am	$1.1 \pm 0.4$	2019-12-17
9333926	114	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	$0.5 \pm 0.4$	2019-12-16
9333924	114	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	< 0.3	2019-12-16
9333929	115	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	$0.6 \pm 0.3$	2019-12-16
9333931	116	2019-12-09 @ 1:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-17
9333932	117	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	$0.6 \pm 0.4$	2019-12-17

#### Radon test result report for: DAMASCUS HS MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9333918	118	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	$0.5 \pm 0.3$	2019-12-10
9333919	118	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	$0.5 \pm 0.3$	2019-12-1
9333916	118 OFFICE	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	< 0.3	2019-12-1
9333917	119	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	< 0.3	2019-12-1
9333922	119	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	< 0.3	2019-12-1
9333925	119	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	< 0.3	2019-12-1
9333814	12	2019-12-09 @ 8:00 am	2019-12-12 @ 10:00 am	$1.0 \pm 0.4$	2019-12-1
9333958	120	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	$0.9 \pm 0.4$	2019-12-1
9333959	120	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	$0.7 \pm 0.3$	2019-12-1
9333968	121	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-1
9333962	121	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	$0.6 \pm 0.3$	2019-12-1
9333960	121	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	$0.7 \pm 0.4$	2019-12-1
9333876	130	2019-12-09 @ 11:00 am	2019-12-12 @ 7:00 am	< 0.3	2019-12-1
9333877	130	2019-12-09 @ 11:00 am	2019-12-12 @ 7:00 am	< 0.3	2019-12-1
9333870	131	2019-12-09 @ 12:00 pm	2019-12-12 @ 8:00 am	$0.7 \pm 0.3$	2019-12-1
9333875	132	2019-12-09 @ 11:00 am	2019-12-12 @ 7:00 am	$0.7 \pm 0.3$	2019-12-1
9333869	133	2019-12-09 @ 12:00 pm	2019-12-12 @ 8:00 am	< 0.3	2019-12-1
9333865	134	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	$0.7 \pm 0.4$	2019-12-1
9333921	135	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	< 0.3	2019-12-1
9333920	135 OFFICE	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	< 0.3	2019-12-1
9333903	136	2019-12-09 @ 12:00 pm	2019-12-12 @ 10:00 am	< 0.3	2019-12-1
9333902	136	2019-12-09 @ 12:00 pm	2019-12-12 @ 10:00 am	$0.6 \pm 0.3$	2019-12-1
9333901	136	2019-12-09 @ 12:00 pm	2019-12-12 @ 10:00 am	< 0.3	2019-12-1
9333908	136 ADMIN	2019-12-09 @ 12:00 pm	2019-12-12 @ 10:00 am	$0.9 \pm 0.4$	2019-12-1
9333897	136 ASSISTANT PRINCIPAL 1	2019-12-09 @ 12:00 pm	2019-12-12 @ 10:00 am	$1.1 \pm 0.4$	2019-12-1
9333898	136 ASSISTANT PRINCIPAL 2	2019-12-09 @ 12:00 pm	2019-12-12 @ 10:00 am	< 0.3	2019-12-1
9333891	136 ATTENDANCE	2019-12-09 @ 12:00 pm	2019-12-12 @ 10:00 am	< 0.3	2019-12-1
9333907	136 CONFERENCE	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	$1.1 \pm 0.3$	2019-12-1
9333899	136 OFFICE	2019-12-09 @ 12:00 pm	2019-12-12 @ 10:00 am	$0.5 \pm 0.3$	2019-12-1
9333905	136 PRINCIPAL	2019-12-09 @ 12:00 pm	2019-12-12 @ 10:00 am	$0.7 \pm 0.3$	2019-12-1
9333911	137	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	$0.6 \pm 0.4$	2019-12-1
9333915	137 OFFICE 1	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	< 0.3	2019-12-1
9333904	137 OFFICE 2	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	< 0.3	2019-12-1
9333909	137 OFFICE 2	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	< 0.3	2019-12-1
9333914	137 OFFICE 3	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	< 0.3	2019-12-1
9333906	137 OFFICE 4	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	$0.6 \pm 0.4$	2019-12-1
9333913	137 OFFICE 5	2019-12-09 @ 1:00 pm	2019-12-12 @ 10:00 am	< 0.3	2019-12-1

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

#### Radon test result report for: DAMASCUS HS MAIN

Kit #	Room Id	Started		Ended		pCi/L	Analyze
9333910	137 OFFICE 6	2019-12-09 @ 1:	:00 pm	2019-12-12 @ 1	0:00 am	< 0.3	2019-12-16
9333912	137 OFFICE 6	2019-12-09 @ 1:	:00 pm	2019-12-12 @ 1	0:00 am	< 0.3	2019-12-17
9333881	138	2019-12-09 @ 12	2:00 pm	2019-12-12 @ 9	0:00 am	< 0.3	2019-12-16
9333886	138	2019-12-09 @ 12	2:00 pm	2019-12-12 @ 9	0:00 am	< 0.3	2019-12-17
9333887	139	2019-12-09 @ 12	2:00 pm	2019-12-12 @ 1	0:00 am	$1.0 \pm 0.4$	2019-12-17
9333885	140	2019-12-09 @ 12	2:00 pm	2019-12-12 @ 9	0:00 am	$0.7 \pm 0.3$	2019-12-17
9333883	141 BUSINESS	2019-12-09 @ 12	2:00 pm	2019-12-12 @ 1	0:00 am	$0.7 \pm 0.3$	2019-12-16
9333888	141 BUSINESS	2019-12-09 @ 12	2:00 pm	2019-12-12 @ 1	0:00 am	$0.6 \pm 0.3$	2019-12-16
9333889	141 CONFERENCE	2019-12-09 @ 12	2:00 pm	2019-12-12 @ 1	0:00 am	< 0.3	2019-12-16
9333892	141 FINANCIAL	2019-12-09 @ 12	2:00 pm	2019-12-12 @ 1	0:00 am	$0.6 \pm 0.3$	2019-12-16
9333880	142	2019-12-09 @ 12	2:00 pm	2019-12-12 @ 9	0:00 am	$0.6 \pm 0.4$	2019-12-16
9333878	142	2019-12-09 @ 12	2:00 pm	2019-12-12 @ 9	0:00 am	$0.6 \pm 0.3$	2019-12-16
9333890	143 OFFICE	2019-12-09 @ 12	2:00 pm	2019-12-12 @ 9	0:00 am	$1.5 \pm 0.4$	2019-12-16
9333879	144	2019-12-09 @ 12	2:00 pm	2019-12-12 @ 9	0:00 am	$1.0 \pm 0.3$	2019-12-16
9333882	144 OFFICE	2019-12-09 @ 12	2:00 pm	2019-12-12 @ 9	0:00 am	$0.7 \pm 0.3$	2019-12-17
9333815	145	2019-12-09 @ 8:	:00 am	2019-12-12 @ 9	0:00 am	$1.0 \pm 0.4$	2019-12-16
9333884	146	2019-12-09 @ 12	2:00 pm	2019-12-12 @ 9	0:00 am	< 0.3	2019-12-17
9333893	146	2019-12-09 @ 12	2:00 pm	2019-12-12 @ 9	0:00 am	$0.7 \pm 0.3$	2019-12-17
9333816	147	2019-12-09 @ 8:	:00 am	2019-12-12 @ 9	0:00 am	< 0.3	2019-12-16
9333895	148	2019-12-09 @ 12	2:00 pm	2019-12-12 @ 1	0:00 am	$1.0 \pm 0.3$	2019-12-16
9333817	149	2019-12-09 @ 8:	:00 am	2019-12-12 @ 9	0:00 am	< 0.3	2019-12-17
9333818	151	2019-12-09 @ 8:	:00 am	2019-12-12 @ 9	0:00 am	< 0.3	2019-12-16
9333819	1510	2019-12-09 @ 9:	:00 am	2019-12-12 @ 9	0:00 am	$0.5 \pm 0.3$	2019-12-17
9333820	153	2019-12-09 @ 9:	:00 am	2019-12-12 @ 1	0:00 am	< 0.3	2019-12-17
9333832	154	2019-12-09 @ 10	0:00 am	2019-12-12 @ 9	0:00 am	< 0.3	2019-12-16
9333821	155	2019-12-09 @ 9:	:00 am	2019-12-12 @ 9	0:00 am	< 0.3	2019-12-16
9333825	1550	2019-12-09 @ 9:	:00 am	2019-12-12 @ 9	0:00 am	< 0.3	2019-12-16
9333823	155W	2019-12-09 @ 9:	:00 am	2019-12-12 @ 9	0:00 am	< 0.3	2019-12-16
9333830	156	2019-12-09 @ 9:	:00 am	2019-12-12 @ 9	0:00 am	< 0.3	2019-12-16
9333822	157	2019-12-09 @ 9:	:00 am	2019-12-12 @ 9	0:00 am	< 0.3	2019-12-16
9333829	158	2019-12-09 @ 9:	:00 am	2019-12-12 @ 9	0:00 am	< 0.3	2019-12-17
9333824	159	2019-12-09 @ 9:	:00 am	2019-12-12 @ 9	0:00 am	< 0.3	2019-12-16
9333828	161	2019-12-09 @ 9:	:00 am	2019-12-12 @ 9	0:00 am	< 0.3	2019-12-16
9333827	165	2019-12-09 @ 9:	:00 am	2019-12-12 @ 9	0:00 am	< 0.3	2019-12-16
9333826	165	2019-12-09 @ 9:	:00 am	2019-12-12 @ 9	0:00 am	< 0.3	2019-12-16
9333838	170	2019-12-09 @ 10	0:00 am	2019-12-12 @ 8	8:00 am	< 0.3	2019-12-16
9333837	170	2019-12-09 @ 10	0:00 am	2019-12-12 @ 8	8:00 am	< 0.3	2019-12-17

#### Radon test result report for: DAMASCUS HS MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9333843	172	2019-12-09 @ 10:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-17
9333849	173	2019-12-09 @ 10:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-16
9333844	174	2019-12-09 @ 10:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-16
9333847	175	2019-12-09 @ 10:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-16
9333845	176	2019-12-09 @ 10:00 am	2019-12-12 @ 8:00 am	$0.6 \pm 0.3$	2019-12-16
9333872	177	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-16
9333866	177	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-16
9333848	178	2019-12-09 @ 10:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-17
9333852	180	2019-12-09 @ 10:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-16
9333846	180	2019-12-09 @ 10:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-16
9333867	181	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-16
9333864	181	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-17
9333862	183	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-16
9333861	183	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-16
9333863	183	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-17
9333850	184	2019-12-09 @ 10:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-16
9333970	207	2019-12-09 @ 3:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-16
9333974	209	2019-12-09 @ 3:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-16
9333963	213	2019-12-09 @ 3:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-16
9333967	219	2019-12-09 @ 3:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-16
9333966	235	2019-12-09 @ 3:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-16
9333965	235	2019-12-09 @ 3:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-17
9333973	242	2019-12-09 @ 3:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-10
9333969	242	2019-12-09 @ 3:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-10
9333873	50C	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	$0.6 \pm 0.3$	2019-12-16
9333874	50C	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-17
9333871	51	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	$0.9 \pm 0.3$	2019-12-10
9333868	52	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-17
9333894	ASSISTANT PRINCIPAL	2019-12-09 @ 12:00 pm	2019-12-12 @ 10:00 am	$0.8 \pm 0.3$	2019-12-16
9333900	ASSISTANT PRINCIPAL	2019-12-09 @ 12:00 pm	2019-12-12 @ 10:00 am	< 0.3	2019-12-17
9333955	AUDITORIUM	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	$1.1 \pm 0.4$	2019-12-10
9333948	AUDITORIUM	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	$1.0 \pm 0.4$	2019-12-1
9333946	AUDITORIUM	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	< 0.3	2019-12-17
9333956	AUDITORIUM	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	$1.1 \pm 0.4$	2019-12-17
9333961	AUDITORIUM	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	$1.0 \pm 0.4$	2019-12-1
9333860	AUX GYM	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-10
9333857	AUX GYM	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-17

#### Radon test result report for: DAMASCUS HS MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9333858	AUX GYM	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-17
9333856	AUX GYM	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-17
9333953	CAFETERIA	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	$0.7 \pm 0.3$	2019-12-16
9333951	CAFETERIA	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	$1.1 \pm 0.4$	2019-12-16
9333954	CAFETERIA	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	$1.2 \pm 0.4$	2019-12-16
9333952	CAFETERIA	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	$0.9 \pm 0.4$	2019-12-16
9333957	CAFETERIA	2019-12-09 @ 2:00 pm	2019-12-12 @ 11:00 am	$0.9 \pm 0.4$	2019-12-16
9333971	CAFETERIA LOUNGE	2019-12-09 @ 3:00 pm	2019-12-12 @ 11:00 am	$1.0 \pm 0.4$	2019-12-16
9333851	GIRLS LOCKER OFFICE	2019-12-09 @ 10:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-17
9333854	MAIN GYM	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-16
9333859	MAIN GYM	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-16
9333853	MAIN GYM	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-16
9333855	MAIN GYM	2019-12-09 @ 11:00 am	2019-12-12 @ 8:00 am	< 0.3	2019-12-17
9333840	MEDIA CENTER	2019-12-09 @ 10:00 am	2019-12-12 @ 9:00 am	< 0.3	2019-12-16
9333836	MEDIA CENTER	2019-12-09 @ 10:00 am	2019-12-12 @ 9:00 am	< 0.3	2019-12-16
9333841	MEDIA CENTER	2019-12-09 @ 10:00 am	2019-12-12 @ 9:00 am	$0.5 \pm 0.3$	2019-12-16
9333839	MEDIA CENTER	2019-12-09 @ 10:00 am	2019-12-12 @ 9:00 am	< 0.3	2019-12-17
9333835	MEDIA CENTER OFFICE 1	2019-12-09 @ 10:00 am	2019-12-12 @ 9:00 am	< 0.3	2019-12-16
9333842	MEDIA CENTER OFFICE 2	2019-12-09 @ 10:00 am	2019-12-12 @ 9:00 am	< 0.3	2019-12-17
9333833	MEDIA CENTER WORKROOM	2019-12-09 @ 9:00 am	2019-12-12 @ 9:00 am	< 0.3	2019-12-16
9333896	NURSE	2019-12-09 @ 12:00 pm	2019-12-12 @ 10:00 am	$0.9 \pm 0.3$	2019-12-16
9333831	TV AUDIO	2019-12-09 @ 10:00 am	2019-12-12 @ 9:00 am	< 0.3	2019-12-17
9333834	TV CONTROL	2019-12-09 @ 9:00 am	2019-12-12 @ 9:00 am	< 0.3	2019-12-17

EXPOSURE IN BOWSER-N	<b>10RNER RADON CHAMBER</b>
CLIENT KCI Technologi	es Inc. Job Number 193475
NOMINAL Conditions: Radon Conc 25.7	pCi/L Rel. Hum 74.6 % Temp. 69.9 F
Date Start: 12/13/19 Date Stop: 12/16/19	Date Start: Date Stop:
(Group 1)	Time Start: Time Stop: Device No.'s:
9334502 thro 9334510, 9334314, 9334316, 9334517, 19334519, 9334519 9334522 thro 9334528 By	
Date Start: $12 13 19$ Date Stop: $12 16 19$ 0811 Time Start: $080$ acmTime Stop: $0811$	
(Group 2) Device No.'s: (20) Char. Bays-	Device No.'s:
9334529 thro 9334538, 9334549, 9334542 thro 9334550	
<del>8</del> 3	
Date Start: 12/13/19 Date Stop: 12/16/19	Date Start: Date Stop:
Time Start: 0816 Time Stop: 0816	Time Start: Time Stop:
(Gray 3) Device No.'s: (20) Char. Bags. 9334551, 9334552, 9334562,	Device No.'s:
<u>9334335 thno 9334559,</u> 9334369, 9334576, 9334579,	
9334580, 9334583, 9334584 9334391, 9334593, 9334594	
<u>9334397, 9334598, 9334599</u> BA	

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

#### December 18, 2019

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

Radon test result report for:

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

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

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

Radon test result report for:

## N/A

	ld Started	Ended	pCi/L	Analyzed
9334548 N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	$24.0 \pm 1.4$	2019-12-18
9334555 N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	$23.4 \pm 1.4$	2019-12-18
9334562 N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	$23.5 \pm 1.4$	2019-12-18

 $\frac{\text{Radon test result report for:}}{S}$ 

## N/A

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



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

## **Radon Test Kit Chain of Custody**

Project Name: MCPS Radon 2019 Week 1

Name of Schools:

- 1. Baker M.S.
- 2. Belmont E.S.
- 3. Clarksburg E.S.
- 4. Clarksburg H.S.
- 5. Clearspring E.S.
- 6. Damascus E.S.
- 7. Damascus H.S.
- 8. Dufief E.S.
- 9. Fields Road E.S.
- 10. Gaithersburg E.S.
- 11. Germantown E.S.
- 12. Great Seneca Creek E.S.

- 13. Jones Lane E.S.
- 14. Lake Seneca E.S.
- 15. McAuliffe E.S.
- 16. Quince Orchard H.S.
- 17. Rosa Parks M.S.
- 18. Snowden Farm E.S.
- 19. South Lake E.S.
- 20. Stone Mill E.S.
- 21. Travilah E.S.
- 22. Watkins Mill E.S.
- 23. Watkins Mill H.S.
- 24. Whitman H.S.

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

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

## RADON SCREENING SURVEY – FOLLOW-UP DAMASCUS HIGH SCHOOL

## 25921 Ridge Rd., Damascus, Maryland 20872

### EXECUTIVE SUMMARY

Date of Test Report:	3/28/19
Round of Testing:	Initial
<	Follow-up
	Post Remediation
# Rooms Tested	2
# Rooms <u>≥</u> 4.0 pCi/L:	1
Low Value:	<0.4
High Value:	4.5
Confirmed Rooms ≥ 4.0 pCi/L US EPA	1
Action Level	

## Summary of Sampling Events ≥ 4.0 pCi/L

Room	Result (pCi/L) 2/21/19	Result (pCi/L) 3/28/19	Average Result (pCi/L)
Outside	5.5	4.5	5.0
Concession			
182	Missing	<0.4	<0.4

# (in)



## MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

Executive Summary: Damascus High School 25921 Ridge Road Damascus, MD 20872

Date of Test Report:	3/28/2019
Round of Testing:	Initial
	Follow-up
	Post Remediation
	2 Year Testing
	5 Year Testing
	HVAC Upgrade
	Window Replacement
	New Addition
	New Facility
# of Rooms Tested:	2
# of Rooms ≥ 4.0 pCi/L:	1
Low Value:	<0.4
High Value:	4.5

#### **Project Status**

Rooms with results ≥ 4.0 pCi/L: Outside Concession (4.5 pCi/L) Current Project Status at this time: Retesting completed; use the average of the initial and re-test results in a room to determine if remediation is necessary.



March 28, 2019

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

**Re: Radon Testing Services** 

Location: Damascus High School 25921 Ridge Road Damascus, MD 20872

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 Damascus High School, located at 25921 Ridge Road, Damascus, MD 20872 (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 or www.epa.gov/radon.

PSI visited the site on February 25, 2019 and deployed two (2) activated charcoal (AC) radon test kit. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on February 28, 2019 to retrieve the radon sampling test kit. A floor plan map of the building with the test location is included as Attachment A of this report.

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

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

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

#### <u>Results:</u>

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
≥ 4.0 pCi/L	Outside Concession	4.5 pCi/L
≤ 4.0 pCi/L	See Attack	nment 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** 

Non-April Jourtich

Nand Kaushik, P.E. Department Manager, Environmental Services Nand.Kaushik@intertek.com

Attachments:

A – Floor Plan with Test Locations

B – Table 1 – Radon Test Summary Spreadsheet

C – Laboratory Analytical Results

# ATTACHMENT B

Radon Test Summary Spreadsheet

Radon Testing Results		
Damascus High School		
Tes	ting period: 02/25/19 - 02/28	3/19
Kit Number	Room / Area	Result (pCi/L)
3923433	Room 182	<0.4
3923434	Outside Concession	4.5

	Summary of Elevat	ted Tests	
	Damascus High	School	
Room/Area	Result (pCi/L) Testing period: 12/03/18 - 12/06/18	Result (pCi/L) Testing period: 02/25/19 - 02/28/19	Average Result (pCi/L)
Outside Concession	5.5	4.5	5.0

## 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

## Radon in Air

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)	MCPS Radon Survey Damascas HS
2930 Eskridge Road	25921 Ridge Road
Fairfax VA 22031	Damascus MD 20872

Log Number	Device Number	Test Expo	sure Duration:	Area Tested	Result pCi/L
3220614	3923433 02/25/2019	6:32 am	02/28/2019 6:15 am	Floor Main Room 182	< 0.4
3220615	3923434 02/25/2019	6:25 am	02/28/2019 6:17 am	Floor Ground Room Outside Concession	4.5

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

written interpretation of the results.

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



## MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

Executive Summary: Damascus High School 25921 Ridge Road Damascus, MD 20872

Date of Test Report:	02/21/2019
Round of Testing:	Initial
	Follow-up
	Post Remediation
	2 Year Testing
	5 Year Testing
	HVAC Upgrade
	Window Replacement
	New Addition
	New Facility
# of Rooms Tested:	122
# of Rooms $\geq$ 4.0 pCi/L:	1
Low Value:	< 0.4
High Value:	5.5
Rooms with Results	Quitaida Canagasian
≥ 4.0 pCi/L:	Outside Concession

#### **Project Status**

Initial testing complete: Re-test needed for results  $\geq$  4.0 pCi/L. Missing or compromised samples need re-test. (in)

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: Damascus High School 25921 Ridge Road Damascus, MD 20872

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 Damascus High School, located at 25921 Ridge Road, Damascus, MD 20872 (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 or www.epa.gov/radon.

PSI visited the site on December 3, 2018 and deployed one hundred and forty-nine (149) activated charcoal (AC) radon test kits. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on December 6, 2018 to retrieve the radon sampling test kits. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

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



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.

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	Outside Concession	5.5
≥ 4.0 pCi/L	Outside Concession (D)	5.5
≤ 4.0 pCi/L	See Attack	hment 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**

Non-Ame Jewlih

Nand Kaushik, P.E. Department Manager, Environmental Services Nand.Kaushik@intertek.com

Attachments:

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

# ATTACHMENT B

Radon Test Summary Spreadsheet

	Radon Testing Results		
	Damascus High School		
Testing Period: 12/3/18 - 12/6/18Kit NumberRoom / AreaResult (pCi/L)			
3926382	1	0.5	
3926383	2	<0.4	
3926385	3	0.5	
3926386	4	0.4	
3926387	5	0.4	
3926388	7	<0.4	
3926389	8	1.2	
3926390	9	0.7	
3918441	10	0.9	
3918442	10	<0.4	
3918444	11	1.0	
3918444 3917574	102	0.5	
3917577	102	0.5	
3917577	103	<0.4	
	104	<0.4	
3926381 3926321	105	0.4	
3926325	110	<0.4	
3926326	111	<0.4	
3926330	113	1.0	
3926441	114	0.7	
3926442	115	0.8	
3926323	116	0.5	
3926324	117	0.4	
3926399	118		
3926444	119	< 0.4	
3917632	120	1.2	
3917631	121	0.9	
3918398	130	0.4	
3918395	131	0.4	
3918397	132	<0.4	
3918394	133	0.5	
3918396	134	0.6	
3926410	136	<0.4	
3926409	137	0.7	
3918380	139	0.8	
3918377	140	0.8	
3918376	143	0.7	
3918373	144	1.0	
3918371	145	0.6	
3917750	147	1.9	
3917749	148	0.7	
3917747	149	<0.4	
3917748	150	0.7	

Radon Testing Results Damascus High School				
3917744	<b>Room / Area</b> 151	Result (pCi/L <0.4		
3917744	151	<0.4		
	155	0.4		
3918399 3918392	156	<0.4		
3918392	150	<0.4		
3918391	158	<0.4		
3918446 3918448	159	<0.4		
	160 161	<0.4		
3918458 3918445	162	<0.4		
3918459	163	<0.4		
3917743	166 170	<0.4		
3926451		<0.4		
3926453	171	<0.4		
3926491	174	<0.4		
3926492	177	<0.4		
3926481	209	<0.4		
3926496	220	0.9		
3926498	223	0.8		
3926499	227	0.5		
3926500	250	<0.4		
3917576	102A	0.5		
3917575	102B	0.5		
3917579	103	0.5		
3917580	103 Office	<0.4		
3918454	104 Office	0.4		
3926322	108 Office	1.2		
3926329	112A	0.8		
3926327	112A	0.6		
3926443	115 Kitchen	0.5		
3926400	118 Office	0.5		
3926445	119 Office	<0.4		
3926446	119 Practice Room	<0.4		
3926402	137 Office	0.9		
3926403	137 Workroom	0.4		
3918378	141	0.6		
3926450	142 Conference	0.9		
3918400	152	<0.4		
3918452	152	<0.4		
3918393	155A	<0.4		
3918449	155B	0.8		
3917742	163 Office	<0.4		
3917741	163 Workroom	<0.4		

Radon Testing Results					
Damascus High School					
Testing Period: 12/3/18 - 12/6/18					
Kit Number	Room / Area	Result (pCi/L)			
3917746	165 Office	<0.4			
3888190	182 (MISSING)				
3926455	AD Office	<0.4			
3926447	Admin Conference	0.6			
3926408	Admin Secretary	0.5			
3926406	Assistant Principal	0.4			
3926404	Assistant Principal	0.5			
3926405	Assistant Principal	0.8			
3926401	Attendance	0.4			
3917634	Auditorium	1.1			
3917635	Auditorium	1.2			
3917636	Auditorium Stage	1.3			
3926493	Boy's PE Office	<0.4			
3918372	Building Service Office	1.3			
3926448	Business Manager	0.8			
3917571	Cafeteria	0.5			
3917572	Cafeteria	0.6			
3917573	Cafeteria Staff Room	0.7			
3926494	Coaches Office	0.7			
3918375	Computer Office	1.0			
3926449	Financial Assistant	0.9			
3926454	Girls Locker Room Office	<0.4			
3926394	Guidance Conference	<0.4			
3918379	Health Office	0.4			
3915451	IMC Office	<0.4			
3918454	IMC Workroom	<0.4			
3926456	Interior Concession Stand	<0.4			
3917639	Kitchen	0.9			
3917640	Kitchen Office	<0.4			
3926457	Main Gym	0.4			
3926458	Main Gym	0.6			
3917638	Mens Dressing	1.0			
3926483	Outside Concession	5.5			
3926407	Principal	0.7			
3926392	Registrar	<0.4			
3926393	Registrar Office	<0.4			
3926395	Resource Counselor	<0.4			
3926396	School Counselor	<0.4			
3926397	School Counselor	<0.4			
3926398	School Counselor	<0.4			
3926459	Small Gym	0.4			
3926460	Small Gym	<0.4			
3926495	Trainers Room	0.8			

	Damascus High School	
	Testing Period: 12/3/18 - 12/6/1	8
Kit Number	Room / Area	Result (pCi/L
3917745	TV Studio	0.4
3917637	Womens Dressing	0.9

	Radon Testing Results				
Damascus High School					
Testing Period: 12/3/18 - 12/6/18					
Kit Number	QC Type	Result (pCi/L)			
3926384	2 (D)	<0.4			
3918443	11 (D)	<0.4			
3917578	103 (D)	0.5			
3926328	112 (D)	0.5			
3917633	120 (D)	1.3			
3926391	136 (D)	0.4			
3918374	144 (D)	0.6			
3918460	163 (D)	<0.4			
3926452	170 (D)	<0.4			
3926497	220 (D)	0.8			
3918450	155B (D)	0.7			
3918456	IMC Office (D)	<0.4			
3926482	Outside Concession (D)	5.5			
3918186	Field Blank	<0.4			
3919571	Field Blank	<0.4			
3919572	Field Blank	<0.4			
3919459	Office Blank	<0.4			
3918183	Transit Blank	<0.4			

## Table Notes:

- D Duplicate
- FB Field Blank
- OB Office Blank
- TB Transit Blank
- QC Quality Control

# ATTACHMENT C

Laboratory Analytical Results



Laboratory Report for:

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

Property Tested: Project # 04481387-1

Intertek-PSI (VA)	MCPS Radon Survey Damasucas HS
2930 Eskridge Road	Not Indicated
Fairfax VA 22031	Damascus MD 20872

Log Device Number Number	Test Exposure Duration:	Area Tested	Result pCi/L
3202003 3926382 12/03/2018	3 6:40 am 12/06/2018 6:30 am	Floor Lower Room 1	0.5
3202004 3926383 12/03/2018	3 6:42 am 12/06/2018 6:31 am	Floor Lower Room 2	< 0.4
3202005 3926384 12/03/2018	3 6:42 am 12/06/2018 6:31 am	Floor Lower Room 2 Duplicate	< 0.4
3202006 3926385 12/03/2018	3 6:46 am 12/06/2018 6:33 am	Floor Lower Room 3	0.5
3202007 3926386 12/03/2018	3 6:48 am 12/06/2018 6:34 am	Floor Lower Room 4	0.4
3202008 3926387 12/03/2018	3 6:50 am 12/06/2018 6:35 am	Floor Lower Room 5	0.9
3202009 3926388 12/03/2018	3 6:52 am 12/06/2018 6:36 am	Floor Lower Room 7	< 0.4
3202010 3926389 12/03/2018	3 6:54 am 12/06/2018 6:37 am	Floor Lower Room 8	1.2
3202011 3926390 12/03/2018	3 6:56 am 12/06/2018 6:38 am	Floor Lower Room 9	0.7
3202012 3918441 12/03/2018	3 6:58 am 12/06/2018 6:39 am	Floor Lower Room 10	0.9
3202013 3918442 12/03/2018	3 7:00 am 12/06/2018 6:40 am	Floor Lower Room 11	< 0.4

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged:

ged: 12/07/2018

Date Analyzed: 12/07/2018

Date Reported: 12/19/2018

Report Reviewed By: \_ Disclaimer:

Report Approved By:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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



Laboratory Report for:

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

Property Tested: Project # 04481387-1

Intertek-PSI (VA)	MCPS Radon Survey Damasucas HS
2930 Eskridge Road	Not Indicated
Fairfax VA 22031	Damascus MD 20872

Log Device Number Number	Test Exposure Duration:	Area Tested	Result pCi/L
3202014 3918443 12/03/2018	3 7:00 am 12/06/2018 6:40 am	Floor Lower Room 11 Duplicate	< 0.4
3202015 3918444 12/03/2018	3 7:00 am 12/06/2018 6:40 am	Floor Lower Room 12	1.0
3202016 3918445 12/03/2018	3 7:06 am 12/06/2018 6:45 am	First Floor Room 162	< 0.4
3202017 3918446 12/03/2018	3 7:06 am 12/06/2018 6:45 am	First Floor Room 159	< 0.4
3202018 3918447 12/03/2018	3 7:10 am 12/06/2018 6:47 am	First Floor Room 158	< 0.4
3202019 3918448 12/03/2018	3 7:12 am 12/06/2018 6:48 am	First Floor Room 160	0.4
3202020 3918449 12/03/2018	3 7:14 am 12/06/2018 6:50 am	First Floor Room 155B	0.8
3202021 3918450 12/03/2018	3 7:14 am 12/06/2018 6:50 am	First Floor Room 155B Duplicate	0.7
3202022 3918391 12/03/2018	3 7:18 am 12/06/2018 6:51 am	First Floor Room 157	< 0.4
3202023 3918392 12/03/2018	3 7:20 am 12/06/2018 6:52 am	First Floor Room 156	< 0.4
3202024 3918393 12/03/2018	3 7:22 am 12/06/2018 6:53 am	First Floor Room 155A	< 0.4

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged:

12/07/2018

Date Analyzed: 12/07/2018

Date Reported: 12/19/2018

**Disclaimer:** 

Report Reviewed By: \_

Report Approved By:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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



Laboratory Report for:

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

Property Tested: Project # 04481387-1

Intertek-PSI (VA)	MCPS Radon Survey Damasucas HS
2930 Eskridge Road	Not Indicated
Fairfax VA 22031	Damascus MD 20872

Log Number	Device Number		Test Expo	sure Duratior	ו:	Area Tested	Result pCi/L
3202025	3918394	12/03/2018	7:24 am	12/06/2018	6:54 am	First Floor Room 133	0.5
3202026	3918395	12/03/2018	7:26 am	12/06/2018	6:55 am	First Floor Room 131	0.4
3202027	3918396	12/03/2018	7:28 am	12/06/2018	6:56 am	First Floor Room 134	0.6
3202028	3918397	12/03/2018	7:30 am	12/06/2018	6:57 am	First Floor Room 132	< 0.4
3202029	3918398	12/03/2018	7:32 am	12/06/2018	6:58 am	First Floor Room 130	0.4
3202030	3918399	12/03/2018	7:34 am	12/06/2018	6:59 am	First Floor Room 154	0.4
3202031	3918400	12/03/2018	7:36 am	12/06/2018	7:00 am	First Floor Room IMC	< 0.4
3202032	3918452	12/03/2018	7:38 am	12/06/2018	7:01 am	First Floor Room IMC	< 0.4
3202033	3918453	12/03/2018	7:40 am	12/06/2018	7:02 am	First Floor IMC Workroom	< 0.4
3202034	3918456	12/03/2018	7:42 am	12/06/2018	7:10 am	First Floor Room IMC Office Duplicate	< 0.4
3202035	3918457	12/03/2018	7:46 am	12/06/2018	7:11 am	First Floor Room 153	< 0.4

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged:

ged: 12/07/2018

Date Analyzed: 12/07/2018

Date Reported: 12/19/2018

Report Reviewed By: \_ Disclaimer:

Report Approved By:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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



Laboratory Report for:

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

Property Tested: Project # 04481387-1

Intertek-PSI (VA)	MCPS Radon Survey Damasucas HS
2930 Eskridge Road	Not Indicated
Fairfax VA 22031	Damascus MD 20872

Log Device Number Number	Test Exposure Duration:	Area Tested	Result pCi/L
3202036 3918458 12/0	03/2018 7:48 am 12/06/2018 7:12 am	First Floor Room 161	< 0.4
3202037 3918459 12/0	03/2018 7:50 am 12/06/2018 7:14 am	First Floor Room 163	< 0.4
3202038 3918460 12/0	03/2018 7:50 am 12/06/2018 7:14 am	First Floor Room 163 Duplicate	< 0.4
3202039 3917741 12/0	03/2018 7:54 am 12/06/2018 7:15 am	First Floor 163 Workroom	< 0.4
3202040 3917742 12/0	03/2018 7:56 am 12/06/2018 7:16 am	First Floor Room 163 Office	< 0.4
3202041 3917743 12/0	03/2018 7:58 am 12/06/2018 7:17 am	First Floor Room 166	< 0.4
3202042 3917744 12/0	03/2018 8:00 am 12/06/2018 7:18 am	First Floor Room 151	< 0.4
3202043 3917745 12/0	03/2018 8:02 am 12/06/2018 7:19 am	First Floor Room 165	0.4
3202044 3917746 12/0	03/2018 8:04 am 12/06/2018 7:20 am	First Floor Room 165 Office	< 0.4
3202045 3917747 12/0	03/2018 8:06 am 12/06/2018 7:21 am	First Floor Room 149	< 0.4
3202046 3917748 12/0	03/2018 8:08 am 12/06/2018 7:22 am	First Floor Room 150	0.7

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged:

12/07/2018

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

**Disclaimer:** 

Report Reviewed By: \_

Report Approved By:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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



Laboratory Report for:

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

Property Tested: Project # 04481387-1

Intertek-PSI (VA)	MCPS Radon Survey Damasucas HS
2930 Eskridge Road	Not Indicated
Fairfax VA 22031	Damascus MD 20872

Log Device Number Numbe	Toot Evi	oosure Duration:	Area Tested	Result pCi/L
3202047 3917749	12/03/2018 8:10 am	12/06/2018 7:23 am	First Floor Room 148	0.7
3202048 3917750	12/03/2018 8:12 am	12/06/2018 7:24 am	First Floor Room 147	1.9
3202049 3918371	12/03/2018 8:14 am	12/06/2018 7:25 am	First Floor Room 145	0.6
3202050 3918372	12/03/2018 8:16 am	12/06/2018 7:26 am	First Floor Room 146	1.3
3202051 3918373	12/03/2018 8:20 am	12/06/2018 7:28 am	First Floor Room 144	1.0
3202052 3918374	12/03/2018 8:20 am	12/06/2018 7:28 am	First Floor Room 144 Duplicate	0.6
3202053 3918375	5 12/03/2018 8:22 am	12/06/2018 7:29 am	First Floor Room Computer Office	1.0
3202054 3918376	5 12/03/2018 8:24 am	12/06/2018 7:30 am	First Floor Room 143	0.7
3202055 3918377	′ 12/03/2018 8:26 am	12/06/2018 7:31 am	First Floor Room 140	0.8
3202056 3918378	12/03/2018 8:28 am	12/06/2018 7:45 am	First Floor Room Health	0.6
3202057 3918379	12/03/2018 8:30 am	12/06/2018 7:46 am	First Floor Room Health Office	0.4

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged:

ged: 12/07/2018

Date Analyzed: 12/07/2018 Date

Date Reported: 12/19/2018

Disclaimer:

Report Reviewed By: \_

Report Approved By:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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



Laboratory Report for:

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

Property Tested: Project # 04481387-1

Intertek-PSI (VA)	MCPS Radon Survey Damasucas HS
2930 Eskridge Road	Not Indicated
Fairfax VA 22031	Damascus MD 20872

Log Devic Number Numb	Toot Evr	oosure Duration:	Area Tested	Result pCi/L
3202058 391838	0 12/03/2018 8:32 am	12/06/2018 7:47 am	First Floor Room 139	0.8
3202059 392640	1 12/03/2018 8:34 am	12/06/2018 7:48 am	First Floor Room Attendance	0.4
3202060 392640	2 12/03/2018 8:36 am	12/06/2018 7:49 am	First Floor Room 137 Office	0.9
3202061 392640	3 12/03/2018 8:38 am	12/06/2018 7:50 am	First Floor 137 Workroom	0.4
3202062 392640	4 12/03/2018 8:40 am	12/06/2018 7:51 am	First Floor Room Assistant Principal	0.5
3202063 392640	5 12/03/2018 8:42 am	12/06/2018 7:52 am	First Floor Room Assistant Principal	0.8
3202064 392640	6 12/03/2018 8:44 am	12/06/2018 7:53 am	First Floor Room Assistant Principal	0.4
3202065 392640	7 12/03/2018 8:46 am	12/06/2018 7:54 am	First Floor Room Principal	0.7
3202066 392640	8 12/03/2018 8:48 am	12/06/2018 7:55 am	First Floor Room Admin Secretary	0.5
3202067 392640	9 12/03/2018 8:50 am	12/06/2018 7:56 am	First Floor Room 137	0.7
3202068 392641	0 12/03/2018 8:52 am	12/06/2018 7:58 am	First Floor Room 136	< 0.4

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged:

ged: 12/07/2018

Date Analyzed: 12/07/2018

Date Reported: 12/19/2018

Disclaimer:

Report Reviewed By: \_

Report Approved By:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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



Laboratory Report for:

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

Property Tested: Project # 04481387-1

Intertek-PSI (VA)	MCPS Radon Survey Damasucas HS
2930 Eskridge Road	Not Indicated
Fairfax VA 22031	Damascus MD 20872

Log Device Number Number	Test Exposure Duration:	Area Tested	Result pCi/L
3202069 3926391 12/0	03/2018 8:52 am 12/06/2018 7:58 am	First Floor Room 136 Duplicate	0.4
3202070 3926392 12/0	03/2018 8:56 am 12/06/2018 7:59 am	First Floor Room Registrar	< 0.4
3202071 3926393 12/0	03/2018 8:58 am 12/06/2018 8:00 am	First Floor Room Registrar Office	< 0.4
3202072 3926394 12/0	03/2018 9:00 am 12/06/2018 8:01 am	First Floor Room Guidance Conference	< 0.4
3202073 3926395 12/0	03/2018 9:02 am 12/06/2018 8:02 am	First Floor Room Resource Counselor	< 0.4
3202074 3926396 12/0	03/2018 9:04 am 12/06/2018 8:03 am	First Floor Room School Counselor	< 0.4
3202075 3926397 12/0	03/2018 9:06 am 12/06/2018 8:04 am	First Floor Room School Counselor	< 0.4
3202076 3926398 12/0	03/2018 9:08 am 12/06/2018 8:05 am	First Floor Room School Counselor	< 0.4
3202077 3926399 12/0	03/2018 9:10 am 12/06/2018 8:06 am	First Floor Room 118	0.5
3202078 3926400 12/0	03/2018 9:12 am 12/06/2018 8:07 am	First Floor Room 118 Office	0.5
3202079 3917631 12/0	03/2018 9:14 am 12/06/2018 8:08 am	First Floor Room 121	0.9

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged:

12/07/2018

Date Analyzed: 12/07/2018

Date Reported: 12/19/2018

**Disclaimer:** 

Report Reviewed By: \_

Report Approved By:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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



Laboratory Report for:

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

Property Tested: Project # 04481387-1

Intertek-PSI (VA)	MCPS Radon Survey Damasucas HS
2930 Eskridge Road	Not Indicated
Fairfax VA 22031	Damascus MD 20872

Log Device Number Number	Test Exposure Duration:	Area Tested	Result pCi/L
3202080 3917632 12/03/202	8 9:16 am 12/06/2018 8:11 am	First Floor Room 120	1.2
3202081 3917633 12/03/201	8 9:16 am 12/06/2018 8:11 am	First Floor Room 120 Duplicate	1.3
3202082 3917634 12/03/201	8 9:20 am 12/06/2018 8:13 am	First Floor Room Auditorium	1.1
3202083 3917635 12/03/201	8 9:22 am 12/06/2018 8:15 am	First Floor Room Auditorium	1.2
3202084 3917636 12/03/201	8 9:24 am 12/06/2018 8:17 am	First Floor Room Auditorium Stage	1.3
3202085 3917637 12/03/201	8 9:26 am 12/06/2018 8:19 am	First Floor Room Womens Dressing	0.9
3202086 3917638 12/03/201	8 9:28 am 12/06/2018 8:21 am	First Floor Room Mens Dressing	1.0
3202087 3917640 12/03/201	8 9:30 am 12/06/2018 8:23 am	First Floor Room Kitchen	0.9
3202088 3917639 12/03/201	8 9:32 am 12/06/2018 8:25 am	First Floor Room Kitchen Office	< 0.4
3202089 3917571 12/03/207	8 9:34 am 12/06/2018 8:27 am	First Floor Room Cafeteria	0.5
3202090 3917572 12/03/202	8 9:36 am 12/06/2018 8:29 am	First Floor Room Cafeteria	0.6

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged:

ged: 12/07/2018

Date Analyzed: 12/07/2018 Date Repor

Date Reported: 12/19/2018

Disclaimer:

Report Reviewed By: \_

Report Approved By:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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



Laboratory Report for:

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

Property Tested: Project # 04481387-1

Intertek-PSI (VA)	MCPS Radon Survey Damasucas HS
2930 Eskridge Road	Not Indicated
Fairfax VA 22031	Damascus MD 20872

Log Number	Device Number		Test Expos	sure Duratio	n:	Area Tested	Result pCi/L
3202091	3917573	12/03/2018	9:38 am	12/06/2018	8:31 am	First Floor Room Cafeteria Staff	0.7
3202092	3917574	12/03/2018	9:40 am	12/06/2018	8:33 am	First Floor Room 102	0.5
3202093	3917575	12/03/2018	9:42 am	12/06/2018	8:35 am	First Floor Room 102B	0.5
3202094	3917576	12/03/2018	9:44 am	12/06/2018	8:37 am	First Floor Room 102A	0.5
3202095	3917577	12/03/2018	9:46 am	12/06/2018	8:41 am	First Floor Room 103	0.4
3202096	3917578	12/03/2018	9:46 am	12/06/2018	8:41 am	First Floor Room 103 Duplicate	0.5
3202097	3917579	12/03/2018	9:50 am	12/06/2018	8:43 am	First Floor 103 Classroom	0.5
3202098	3917580	12/03/2018	9:52 am	12/06/2018	8:45 am	First Floor Room 103 Office	< 0.4
3202099	3918454	12/03/2018	9:54 am	12/06/2018	8:47 am	First Floor Room 104 Office	0.4
3202100	3926381	12/03/2018	9:56 am	12/06/2018	8:49 am	First Floor Room 105	< 0.4
3202101	3918455	12/03/2018	9:58 am	12/06/2018	8:51 am	First Floor Room 104	< 0.4

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged:

ged: 12/07/2018

Date Analyzed: 12/07/2018

Date Reported: 12/19/2018

Disclaimer:

Report Reviewed By: \_

Report Approved By:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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



Laboratory Report for:

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

Property Tested: Project # 04481387-1

Intertek-PSI (VA)	MCPS Radon Survey Damasucas HS
2930 Eskridge Road	Not Indicated
Fairfax VA 22031	Damascus MD 20872

Log Device Number Number	Test Exposure Duration:	Area Tested	Result pCi/L
3202102 3926321 12/03/2018	3 10:00 am 12/06/2018 8:53 am	First Floor Room 108	0.4
3202103 3926322 12/03/2018	3 10:02 am 12/06/2018 8:55 am	First Floor Room 108 Office	1.2
3202104 3926323 12/03/2018	8 10:04 am 12/06/2018 8:57 am	First Floor Room 116	0.5
3202105 3926324 12/03/2018	8 10:06 am 12/06/2018 8:59 am	First Floor Room 117	0.4
3202106 3926325 12/03/2018	3 10:08 am 12/06/2018 9:01 am	First Floor Room 110	< 0.4
3202107 3926326 12/03/2018	3 10:10 am 12/06/2018 9:03 am	First Floor Room 111	< 0.4
3202108 3926327 12/03/2018	3 10:12 am 12/06/2018 9:07 am	First Floor Room 112	0.6
3202109 3926328 12/03/2018	3 10:12 am 12/06/2018 9:07 am	First Floor Room 112 Duplicate	0.5
3202110 3926329 12/03/2018	3 10:16 am 12/06/2018 9:09 am	First Floor 112 Observation Room	0.8
3202111 3926330 12/03/2018	3 10:18 am 12/06/2018 9:11 am	First Floor Room 113	1.0
3202112 3926441 12/03/2018	3 10:20 am 12/06/2018 9:13 am	First Floor Room 114	0.7

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged:

ged: 12/07/2018

Date Analyzed: 12/07/2018

Date Reported: 12/19/2018

Report Reviewed By: \_ Disclaimer:

Report Approved By:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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



Laboratory Report for:

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

Property Tested: Project # 04481387-1

Intertek-PSI (VA)	MCPS Radon Survey Damasucas HS
2930 Eskridge Road	Not Indicated
Fairfax VA 22031	Damascus MD 20872

Log Number	Device Number		Test Expo	sure Duratio	on:	Area Tested	Result pCi/L
3202113	3926442	12/03/2018	10:22 am	12/06/2018	9:15 am	First Floor Room 115	0.8
3202114	3926443	12/03/2018	10:24 am	12/06/2018	9:17 am	First Floor Room 115 Kitchen	0.5
3202115	3926444	12/03/2018	10:26 am	12/06/2018	9:19 am	First Floor Room 119	< 0.4
3202116	3926445	12/03/2018	10:28 am	12/06/2018	9:21 am	First Floor Room 119 Office	< 0.4
3202117	3926446	12/03/2018	10:30 am	12/06/2018	9:23 am	First Floor 119 Practice Room	< 0.4
3202118	3926447	12/03/2018	10:32 am	12/06/2018	9:25 am	First Floor Room Main Office Conference	0.6
3202119	3926448	12/03/2018	10:34 am	12/06/2018	9:27 am	First Floor Room 142 Business Manager	0.8
3202120	3926449	12/03/2018	10:36 am	12/06/2018	9:29 am	First Floor Room 142 Financial Assistant	0.9
3202121	3926450	12/03/2018	10:38 am	12/06/2018	9:31 am	First Floor Room 142 Conference	0.9
3202122	3926451	12/03/2018	10:40 am	12/06/2018	9:35 am	First Floor Room 170	< 0.4
3202123	3926452	12/03/2018	10:40 am	12/06/2018	9:35 am	First Floor Room 170 Duplicate	< 0.4

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged:

ged: 12/07/2018

Date Analyzed: 12/07/2018 Date Re

Date Reported: 12/19/2018

Report Reviewed By: \_ Disclaimer:

Report Approved By:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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



Laboratory Report for:

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

Property Tested: Project # 04481387-1

Intertek-PSI (VA)	MCPS Radon Survey Damasucas HS
2930 Eskridge Road	Not Indicated
Fairfax VA 22031	Damascus MD 20872

- 3	Device Number	Test	Exposure Dura	ion:	Area Tested	Result pCi/L
3202124 3	8926453 12/0	3/2018 10:44	4 am 12/06/201	8 9:37 am	First Floor Room 171	< 0.4
3202125 3	8926454 12/0	3/2018 10:4	6 am 12/06/201	8 9:39 am	First Floor Room Girls Locker Office	< 0.4
3202126 3	926455 12/0	3/2018 10:48	8 am 12/06/201	8 9:41 am	First Floor Room AD Office	< 0.4
3202127 3	926456 12/0	3/2018 10:5	0 am 12/06/201	8 9:43 am	First Floor Room Interior Con Stand	< 0.4
3202128 3	8926457 12/0	3/2018 10:52	2 am 12/06/201	8 9:45 am	First Floor Room Main Gym	0.4
3202129 3	8926458 12/0	3/2018 10:54	4 am 12/06/201	8 9:47 am	First Floor Room Main Gym	0.6
3202130 3	8926459 12/0	3/2018 10:5	8 am 12/06/201	8 9:51 am	First Floor Room Small Gym	0.4
3202131 3	926460 12/0	3/2018 11:0	0 am 12/06/201	8 9:53 am	First Floor Room Small Gym	< 0.4
3202132 3	8926491 12/0	3/2018 11:02	2 am 12/06/201	8 9:55 am	First Floor Room 174	< 0.4
3202133 3	926492 12/0	3/2018 11:04	4 am 12/06/201	8 9:57 am	First Floor Room 177	< 0.4
3202134 3	926493 12/0	3/2018 11:0	6 am 12/06/201	8 9:59 am	First Floor Room PE Office	< 0.4

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged:

12/07/2018

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

**Disclaimer:** 

Report Reviewed By: \_

Report Approved By:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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



# Radon in Air

NRPP 105011 AL NRSB ARL0007

Laboratory Report for:

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

Property Tested: Project # 04481387-1

Intertek-PSI (VA)	MCPS Radon Survey Damasucas HS
2930 Eskridge Road	Not Indicated
Fairfax VA 22031	Damascus MD 20872

Log Device Number Numbe	. Test Expo	sure Duration:	Area Tested	Result pCi/L
3202135 3926494	12/03/2018 11:08 am	12/06/2018 10:01 am	First Floor Room Coaches Office	0.7
3202136 3926495	12/03/2018 11:10 am	12/06/2018 10:03 am	First Floor Trainers Room	0.8
3202137 3926496	12/03/2018 11:12 am	12/06/2018 10:07 am	First Floor Room 220	0.9
3202138 3926497	12/03/2018 11:12 am	12/06/2018 10:07 am	First Floor Room 220 Duplicate	0.8
3202139 3926498	12/03/2018 11:12 am	12/06/2018 10:07 am	First Floor Room 223	0.8
3202140 3926499	12/03/2018 11:18 am	12/06/2018 10:11 am	First Floor Room 227	0.5
3202141 3926500	12/03/2018 11:20 am	12/06/2018 10:13 am	First Floor Room 250	< 0.4
3202142 3926481	12/03/2018 11:22 am	12/06/2018 10:15 am	First Floor Room 209	< 0.4
3202143 3926483	12/03/2018 11:22 am	12/06/2018 10:15 am	First Floor Room Outside Con	5.5
3202144 3926482	12/03/2018 11:22 am	12/06/2018 10:15 am	First Floor Room Outside Con Duplicate	5.5
3202145 3919459	12/03/2018 6:00 am	12/06/2018 6:00 pm	Office Blank	< 0.4

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged:

ed: 12/07/2018

Date Analyzed: 12/07/2018

Date Reported: 12/19/2018

Disclaimer:

Report Reviewed By: \_

Report Approved By:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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



## Radon in Air

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

NRSB ARL0007

NRPP 105011 AL

Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)	MCPS Radon Survey Damasucas HS
2930 Eskridge Road	Not Indicated
Fairfax VA 22031	Damascus MD 20872

Log De Number Nu	evice umber	Test Expos	sure Duratio	n:	Area Tested	Result pCi/L
3202146 397	18183 12/03/2018	6:00 am	12/06/2018	6:00 pm	Transit Blank	< 0.4
3202147 397	18186 12/03/2018	6:40 am	12/06/2018	10:19 am	Field Blank	< 0.4
3202148 397	19571 12/03/2018	6:40 am	12/06/2018	10:19 am	Field Blank	< 0.4
3202149 394	19572 12/03/2018	6:40 am	12/06/2018	10:19 am	Field Blank	< 0.4

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

Test Performed By: Nan Lin					
Distributed by: Intertek-PSI (	VA)				
Date Received: 12/07/2018	Date Logged:	12/07/2018	Date Analyzed: 12/07/2018	Date Reported:	12/19/2018
Report Review	ed By:	An Kartin	Report Approved By:	RADO	
Disclaimer:	$\subset$	Š,	Shawn Price, Dire	ctor of Laboratory Oper	ations, AccuStar Labs
The uncertainty of this radon measure	ment is ~+/- 10 %. Fa	ctors contributing to u	uncertainty include statistical variations. d	ailv and seasonal variati	ons in radon

concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.



## Radon in Air

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

NRPP 105011 AL NRSB ARL0007 Ohio RL41

Laboratory Report for:

Property Tested:

Intertek-PSI (VA)	MCPS Radon Survey	
2930 Eskridge Road	4514 Taylorsville Road	
Fairfax VA 22031	Dayton OH 45424	

Log Device Number Number	Test Exposure Duration:	Area Tested	Result pCi/L
3204125 3926831 12/07/2018	3 9:47 am 12/10/2018 9:47 am	Spike	36.1
3204126 3926832 12/07/2018	3 9:47 am 12/10/2018 9:47 am	Spike	34.8
3204127 3926833 12/07/2018	3 9:47 am 12/10/2018 9:47 am	Spike	33.7
3204128 3926834 12/07/2018	3 9:47 am 12/10/2018 9:47 am	Spike	35.8
3204129 3926835 12/07/2018	3 9:47 am 12/10/2018 9:47 am	Spike	35.0
3204130 3926836 12/07/2018	3 9:47 am 12/10/2018 9:47 am	Spike	34.5
3204131 3926837 12/07/2018	3 9:47 am 12/10/2018 9:47 am	Spike	34.6
3204132 3926838 12/07/2018	3 9:47 am 12/10/2018 9:47 am	Spike	34.3
3204133 3926839 12/07/2018	3 9:47 am 12/10/2018 9:47 am	Spike	33.2
3204134 3926840 12/07/2018	3 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: Unknow	n				
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
				$\sim$	
Report Review	ed By:	they Kartin	Report Approved By:	XX2	
Disclaimer:	$\subset$	$\sum$	Shawn Price, Dire	ctor of Laboratory Oper	ations, AccuStar Labs
		•	uncertainty include statistical variations, d erence with test conditions may influence		ions in radon
This report may only be transforred to	a third party in its optir	oty Applytical regulte	relate to the samples AS RECEIVED B		Posulte shown on

# **EXPOSURE IN BOWSER-MORNER RADON CHAMBER**

CLIENT Intertal - PS	I	Job Number 187732	
NOMINAL Conditions: Radon Conc 33.6	pCi/L Rel. Hum	49.1 % Temp. 20.1	F
Date Start: 12/7/18 Date Stop: 12/10/18	P Date Start:	Date Stop:	
Time Start: <u>0947</u> Time Stop: <u>0947</u>	_ Time Start:	Time Stop:	
Device No.'s: (10) Char. Cans-	Device No.'s:_		
3926831 thro 3926840			
		6	
G2 Laft			
Date Start: Date Stop:		Date Stop:	
Time Start: Time Stop:	Time Start:	Time Stop:	
Device No.'s:	Device No.'s:_	24	
Date Start: Date Stop:	Date Start:	Date Stop:	
Time Start: Time Stop:	Time Start:	Time Stop:	
Device No.'s:	Device No.'s:		

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



# **Chain of Custody**

Project Name: MCPS Radon Survey 2018

Name of Schools:

- 1. Ewing Center
- 2. Department of Food & Nutrition Services
- 3. Damascus HS
- 4. Edison HS
- 5. Emory Grove Center
- 6. John Poole MS
- 7. Lakelands Park MS
- 8. Laytonsville ES
- 9. Gaithersburg HS
- 10. Neelsville MS
- 11. Sequoyah ES
- 12. Clarksburg ES Annex

- 13. Garrett Park ES Annex
- 14. Goshen ES
- 15. Kingsley Wilderness Center
- 16. Kensington Parkwood ES
- 17. Monocacy ES
- 18. Lakewood ES
- 19. Little Bennett ES
- 20. Lois P. Rockwell ES
- 21. Olney ES
- 22. North Chevy Chase ES
- 23. Woodfield ES
- 24. Wootton HS

	Date	Initials
Radon Test Kits Deployed	12/03/2018	NL
Radon Test Kits Sampled	12/06/2018	ML
Radon Test Kits Shipped to Lab*	12/06/2018	NL
Radon Test Kits Received by Lab*	12/07/2018;	1 a
	12/08/2018	M

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

# RADON SCREENING SURVEY – FOLLOW-UP DAMASCUS HIGH SCHOOL

# 25921 Ridge Rd., Damascus, Maryland 20872

## EXECUTIVE SUMMARY

Date of Test Report:	3/7/18
Round of Testing:	Initial
<	Follow-up
	Post Remediation
# Rooms Tested	23
# Rooms <u>≥</u> 4.0 pCi/L:	0
Low Value:	<0.3
High Value:	3.7
Confirmed Rooms ≥ 4.0 pCi/L US EPA	1
Action Level	

## Summary of Sampling Events ≥ 4.0 pCi/L

Room	Result (pCi/L) 2/2/18	Result (pCi/L) 3/7/18	Average Result (pCi/L)
121	4.5	3.7	4.1
120	4.1	Missing	



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

Site Name	Damascus High School
Date of Report	March 7, 2018
Round of Testing	Initial
	Follow-up
	Post Remediation
	2 year testing
	5 year testing
	HVAC Upgrade
	Window Replacement
	New Addition
	New Facility
# of Rooms Tested	23
# Rooms ≥4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	3.7 pCi/L

### MCPS RADON TESTING - EXECUTIVE SUMMARY

#### **Project Status**

Current Project Status at this time: Retesting completed; use the average of the initial and re-test results in a room to determine if remediation is necessary.



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

March 7, 2018

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

Re: Radon Testing Services

KCI Job #1214634188

Location: Damascus High School 25921 Ridge Rd. Damascus, Maryland 20872

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools pursuant to completing a "short-term" 3-day radon test for the Damascus High School, located at 25921 Ridge Rd. in Damascus, Maryland 20872 (subject site).

#### SCOPE OF SERVICES

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Safety Board (NRSB) Radon Measurement Specialist (certification #14SS056) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from www.montgomerycountymd.gov/dep/air/radon or www.epa.gov/radon.

KCI visited the site on February 12, 2018 and deployed twenty-six (26) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

- 1. Rooms not successfully tested,
- 2. Rooms with elevated November 2017 results (i.e.  $\geq$ 3.5 piC/L).

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

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

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

#### **EVALUATION OF TESTING CONDITIONS**

These tests represent:

• Follow-up to post-mitigation biennial testing.

These tests were conducted to:

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

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

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

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

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

#### RESULTS

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

The results of the radon test analysis indicated the following:

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

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

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

Sincerely,

Juns Makler

Radon Measurement Specialist KCI Technologies, Inc.

Attachments:

C- Laboratory Analytical Results

B - Radon Test Summary Spreadsheets

# 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

Damascus High School				
Test Period: 02/12/18-02/15/18				
Kit Number Room / Area R				
121	3.7			
102/TECH ROOM	1.6			
120 (Missing)	-			
155 A	0.6			
155 B	0.7			
BAND OFFICE	0.6			
BAND ROOM	0.9			
BANK	1.5			
BSO	1.2			
BUSINESS CONFERENCE	1.1			
CHORUS	< 0.3			
CHORUS ROOM	0.7			
CONFRENCE ROOM	1.2			
CONTROL ROOM	2.6			
DANCE	2.4			
GYM 1 (Missing)	-			
KITCHEN	2.1			
KITCHEN OFFICE	2.4			
MAILROOM	2.1			
PRACTICE	1.0			
SHOP	0.6			
SHOP OFFICE	1.7			
	Room / Area121102/TECH ROOM120 (Missing)155 A155 BBAND OFFICEBAND ROOMBANKBSOBUSINESS CONFERENCECHORUSCHORUS ROOMCONFRENCE ROOMCONFRENCE ROOMCONTROL ROOMDANCEGYM 1 (Missing)KITCHENKITCHEN OFFICEMAILROOMPRACTICESHOP			

	Table 2- Radon Testing Results		
	Damascus High School		
	Test Period: 02/12/18-02/15/18		
Kit Number	QC Type	Result	
7984166	D (BSO)	1.1	
7984157	D (SHOP OFFICE)	1.8	
7984156	FB (CONTROL ROOM)	< 0.3	

# ATTACHMENT C

Laboratory Analytical Results

### Radon test result report for: DAMASCUS HIGH SCHOOL MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7984149	102/TECH ROOM	2018-02-12 @ 10:00 am	2018-02-15 @ 9:00 am	$1.6 \pm 0.4$	2018-02-19
7984146	120	@	@		
7984153	121	2018-02-12 @ 9:00 am	2018-02-15 @ 9:00 am	$3.7 \pm 0.5$	2018-02-19
7984175	155 A	2018-02-12 @ 9:00 am	2018-02-15 @ 9:00 am	$0.6 \pm 0.4$	2018-02-19
7984148	BAND ROOM	2018-02-12 @ 9:00 am	2018-02-15 @ 9:00 am	$0.9 \pm 0.4$	2018-02-19
7984179	BANK	2018-02-12 @ 9:00 am	2018-02-15 @ 9:00 am	$1.5 \pm 0.4$	2018-02-19
7984166	BSO	2018-02-12 @ 9:00 am	2018-02-15 @ 9:00 am	$1.1 \pm 0.4$	2018-02-19
7984154	BSO	2018-02-12 @ 9:00 am	2018-02-15 @ 9:00 am	$1.2 \pm 0.4$	2018-02-19
7984160	<b>BUSINESS CONFERN</b>	2018-02-12 @ 9:00 am	2018-02-15 @ 8:00 am	$1.1 \pm 0.4$	2018-02-19
7984155	CHORUS	2018-02-12 @ 9:00 am	2018-02-15 @ 9:00 am	< 0.3	2018-02-19
7984139	CHORUS ROOM	2018-02-12 @ 9:00 am	2018-02-15 @ 9:00 am	$0.7 \pm 0.4$	2018-02-19
7984174	CONFRENCE ROOM	2018-02-12 @ 9:00 am	2018-02-15 @ 9:00 am	$1.2 \pm 0.4$	2018-02-19
7984156	CONTROL ROOM	2018-02-12 @ 10:00 am	2018-02-15 @ 9:00 am	< 0.3	2018-02-19
7984173	DANCE	2018-02-12 @ 9:00 am	2018-02-15 @ 9:00 am	$2.4 \pm 0.4$	2018-02-19
7984150	KITCHEN	2018-02-12 @ 10:00 am	2018-02-15 @ 9:00 am	$2.1 \pm 0.4$	2018-02-19
7984140	KITCHEN OFFICE	2018-02-12 @ 10:00 am	2018-02-15 @ 9:00 am	$2.4 \pm 0.4$	2018-02-19
7984171	MAILROOM	2018-02-12 @ 9:00 am	2018-02-15 @ 9:00 am	$2.1 \pm 0.4$	2018-02-19
7984151	PRACTICE	2018-02-12 @ 9:00 am	2018-02-15 @ 9:00 am	$1.0 \pm 0.4$	2018-02-19
7984143	SHOP OFFICE	2018-02-12 @ 10:00 am	2018-02-15 @ 9:00 am	$1.7 \pm 0.4$	2018-02-19
7984170	WRESTLING	2018-02-12 @ 9:00 am	2018-02-15 @ 9:00 am	$0.7 \pm 0.3$	2018-02-19



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

# Radon Test Kit Chain of Custody

#### Project Name: MCPS Radon

#### Names of Schools:

- 1. Highland Elementary School
- 2. Stephen Knolls Elementary School
- 3. Silver Creek Middle School
- 4. Woodlin Elementary School
- 5. Sligo Creek Elementary School
- 6. Francis Scott Key Middle School
- 7. John T. Baker Middle School
- 8. Cedar Grove Elementary School
- 9. Clarksburg Elementary School
- 10. Clarksburg Elementary School Annex
- 11. Fields Road Elementary School
- 12. Dufief Elementary School
- 13. Brown Station Elementary School
- 14. Diamond Elementary School
- 15. Fallsmeade Elementary School
- 16. Thomas Whootton High School
- 17. Lake Seneca Elementary School
- 18. Redland Middle School
- 19. Newport Mill Middle School

- 20. Bethesda Trans. and Maint. Depot
- 21. Sequoyah Elementary School
- 22. Gaithersburg Middle School
- 23. Wayside Elementary School
- 24. Travilah Elementary School
- 25. Damascus High School
- 26. Jones Lane Elementary School
- 27. Greencastle Elementary School
- 28. Spring Brook High School
- 29. Montgomery Blair High School
- 30. Watkins Mill High School

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

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

# Radon test result report for: OFFICE BLANKS

7979482 7986991	1 10	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm		
7986991	10		2010-02-10 @ 2:00 pm	< 0.3	2018-02-20
	10	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985684	11	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986987	12	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986993	13	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986990	14	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7979485	2	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985686	3	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986995	4	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986989	5	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986998	6	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986986	7	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986985	8	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986997	9	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20

## Radon test result report for: TRANSIT BLANKS

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

## Radon test result report for:

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

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

EXPOSURE IN BOWSER-N	IORNER RA	DON CHAMBER
CLIENT KCI Technologics	Inc.	Job Number 183530
NOMINAL Conditions: Radon Conc 20.9	pCi/L Rel. Hum	<u>49.8</u> % Temp. <u>79.1</u>
Date Start: 2/16/18 Date Stop: 2/19/18	Date Start:	Date Stop:
Time Start: 105ス Time Stop: 105ス	Time Start:	Time Stop:
Device No.'s: (6) Char. Bags.	Device No.'s:	
7984181, 7986621, 7985683	F	
7984168, 7986618, 7984169		
G3 Middle		
Date Start: Date Stop:	Date Start:	Date Stop:
Time Start: Time Stop:	Time Start:	Time Stop:
Device No.'s:	Device No.'s:	~ę .
	3 4 5 7 7 1	
Date Start: Date Stop:	Date Start:	Date Stop:
Time Start: Time Stop:	Time Start:	Time Stop:
Device No.'s:	Device No.'s:_	
	, <i>*</i>	
	•	
I		

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



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

Site Name	Damascus High School
Date of Report	February 2, 2018
Round of Testing	Initial
	Follow-up
	Post Remediation
(	2 year testing
	5 year testing
	HVAC Upgrade
	Window Replacement
	New Addition
	New Facility
# of Rooms Tested	113
# Rooms ≥4.0 pCi/L	2
Lowest Value	< 0.3 pCi/L
Highest Value	4.5 pCi/L

### MCPS RADON TESTING - EXECUTIVE SUMMARY

Rooms with results  $\geq 4.0 \text{ pCi/L}$ :

121 (4.5 pCi/L), 120 (4.1 pCi/L)

Current Project Status at this time: Testing Completed; retesting needed for results  $\geq$  4.0 pCi/L.

Missing or compromised samples need re-test.



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

February 2, 2018

Mr. Richard Cox, MS Team Leader Montgomery County Public Schools Division of Maintenance Rockville, Maryland 20855

Re: Radon Testing Services

KCI Job #1214694182

Location: Damascus High School 25921 Ridge Rd. Damascus , Maryland 20872

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools pursuant to completing a "short-term" 3-day radon test for the Damascus High School, located at 25921 Ridge Rd. in Damascus, Maryland 20872 (subject site).

#### SCOPE OF SERVICES

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Safety Board (NRSB) Radon Measurement Specialist (certification #14SS056) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from www.montgomerycountymd.gov/dep/air/radon or www.epa.gov/radon.

KCI visited the site on December 5, 2017 and deployed one hundred forty-one (141) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Appendix A of this report.

As a quality control measure, KCI included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, KCI submitted six (6) test kits to

Mr. Richard Cox, MS February 2, 2018 Page 3

Bowser-Morner, Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner, Inc. prior to being returned to the laboratory for analysis.

KCI returned to the site on December 8, 2017 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a NRSB certified analytical laboratory for radon analysis (certification #ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

#### **EVALUATION OF TESTING CONDITIONS**

These tests represent:

• Post-mitigation biennial testing.

These tests were conducted to:

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

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the low-30s to mid-40s and high temperatures ranged from the upper-30s to mid-50s. Maximum sustained winds ranged from 4-17 miles per hour. Average humidity was around 60%. 0.16 Inches of precipitation was recorded during the testing period.

#### <u>RESULTS</u>

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

The results of the radon test analysis indicated the following:

Radon ConcentrationRoomResult $\geq 4.0 \text{ piC/L}$ 1214.5 $\geq 4.0 \text{ piC/L}$ 1204.1 $\leq 4.0 \text{ piC/L}$ See Attachment BSee Attachment B

	Quality Control Samples
Results of Blank Canisters:	The field blanks, office blanks, and lab transit blankshad 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.

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 Makler

James Moulsdale, CHMM Radon Measurement Specialist KCI Technologies, Inc.

Attachments:

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

Damascus High School Test Period: 12/05/17-12/08/17		
	Result	
-	0.9	
	0.6	
	1.3	
	0.7	
5	1.1	
7	< 0.3	
	1.0	
9	1.1	
10	1.1	
11	0.8	
12	1.7	
103	2.1	
104	< 0.3	
105	1.1	
108	1.5	
111	1.4	
112	1.6	
113	0.7	
114	0.5	
	0.6	
	0.5	
117	0.6	
	0.9	
	< 0.3	
	4.1	
	4.5	
	< 0.3	
	0.7	
	0.7	
	1.1	
	0.7	
	0.8	
	1.0	
	1.6	
	1.5	
	1.3	
	1.7	
	1.7	
	1.2	
	1.4	
	1.4	
	2.3	
	1.3	
	1.1	
	0.9	
	Room / Area           1           2           3           4           5           7           8           9           10           11           12           103           104           105           108           111           112           103           104           105           108           111           112           113           114           115           116	

Radon Testing Results					
Damascus High School Test Period: 12/05/17-12/08/17					
Kit Number	Room / Area	Result			
7983911	152	0.9			
7983912	152	0.7			
7983913	153	0.6			
7983905	154	< 0.3			
7983903	156	0.7			
7983902	157	0.8			
7983926	158	< 0.3			
7983916	159	< 0.3			
7983917	160	0.7			
7983925	161	< 0.3			
7983967	162	< 0.3			
7983947	163	0.7			
7975319	165	0.6			
7983943	166	0.8			
7983910	170	0.5			
7983914	171	1.4			
7983921	182	3.0			
7983808	223	0.8			
7983804	224	0.6			
7983816	227	< 0.3			
7983831	229	0.7			
7983825	230	1.0			
7983809	232	1.1			
7983822	240	< 0.3			
7983821	241	< 0.3			
7983823	243	< 0.3			
7983826	244	< 0.3			
7983832	249	0.8			
7983830	253	0.9			
7983974	103 OFFICE	0.8			
7983982	112A	1.5			
7983980	118 OFFICE	0.5			
7983807	119 OFFICE	< 0.3			
7983904	155A	1.1			
	155A 155B	0.7			
7983901		2.7			
7983927	AD OFFICE ADMIN CONF	1.2			
7983958					
7975310	ADMIN SECRET	1.2			
7983960	AP1	1.6			
7983955	AP2	1.7			
7983957		1.1			
7983954	ATTENDANCE	1.1			
7983977	AUDITORIUM	3.2			
7983973	AUDITORIUM	2.7			
7983992	AUDITORIUM	3.0			
7983907	BOYS PE OFFICE	2.5			
7983909 *	BSO (Fan On)	1.6			
7983923	BUSIN MNGR	1.5			
7983986	CAFE	2.1			
7983987	CAFE	2.2			

	Radon Testing Results	
	Damascus High School	
	Test Period: 12/05/17-12/08/17	
Kit Number	Room / Area	Result
7975315	CO	1.0
7983959	COMP OFFICE	1.5
7983991	COUNS.1	0.7
7983995	COUNS1	< 0.3
7983996	COUNS2	0.7
7983998	COUNS3	1.1
7983997	COUNS4	0.8
7983985	COUNS5	0.9
7983962	FINANCIAL ASSIST	1.5
7984000	GUID. CONF.RM	0.8
7983930	GYM1	1.6
7983906	GYM1	1.7
7983929	GYM1	2.0
7983922 *	GYM1 (Missing)	-
7983918	GYM2	1.5
7983919	GYM2	2.0
7983920	GYM2	1.8
7975321	HUB	0.7
7975316	IMC WORKROOM	< 0.3
7983956	NURSE	1.1
7975312	PRINCIPAL	1.2
7983993	REGISTRAR	1.1
7983994	RO	0.8
7975308	SIDE OFFICE	1.2
7983963	SPEC. ED. CONF.	0.9
7975317	TV	1.0
7983915	WEIGHT ROOM	1.9

Damascus High School Test Period: 12/05/17-12/08/17			
Kit Number	QC Type	Result	
7975318	D (108)	1.3	
7983936	D (11)	0.8	
7983801	D (115)	0.8	
7983950	D (130)	0.9	
7975314	D (152)	0.9	
7983946	D (162)	< 0.3	
7983908	D (170)	< 0.3	
7983824	D (227)	0.7	
7983984	D (AUDITORIUM)	3.5	
7983966	D (COMP OFFICE)	1.1	
7983928	D (GYM2)	1.7	
7975311	D (PRINCIPAL)	1.2	
7983814	FB (115)	< 0.3	
7983931	FB (182)	< 0.3	
7983978	FB (AUDITORIUM)	< 0.3	
7983865	FB (COUNS 1)	< 0.3	
7984045	OB (OFFICE BLANK)	< 0.3	

	Summary of Missed Locations	
	Damascus High School	
Test Period: 12/05/17-12/08/17		
Kit Number	Room / Area	Resu
-	102 (Missed location)	-
-	155A (Missed location)	-
-	155B (Missed location)	-
-	BAND ROOM (Missed location)	-
-	BAND OFFICE (Missed location)	-
-	BUSINESS CONFERENCE (Missed location)	-
-	PRACTICE (Missed location)	-
-	CHORUS (Missed location)	-
-	CHORUS ROOM (Missed location)	-
-	BANK (Missed location)	-
-	KITCHEN (Missed location)	-
-	KITCHEN OFFICE (Missed location)	-
-	SHOP (Missed location)	-
-	124 (Missed location)	-
-	CONFERENCE ROOM (Missed location)	-
-	CONTROL ROOM (Missed location)	-
-	DANCE (Missed location)	-
-	MAIL ROOM (Missed location)	-
-	SHOP OFFICE (Missed location)	-
-	TECH ROOM (Missed location)	-
-	WRESTLING (Missed location)	-

Summa	rry of Missing, Compromised and ≥4 piC/L	Tests
	Damascus High School	
	Test Period: 12/05/17-12/08/17	
Kit Number	Room / Area	Result
7983989	120	4.1
7983972	120	4.5
7983909	* BSO (Fan On)	1.6
7983922	* GYM1 (Missing)	-
1303322	OTWIT (Wissing)	-
		1
	l	
		ł
		1
		1
		1
		1
	1	1
<u> </u>		
	1	1
		1
	1	

# ATTACHMENT C

Laboratory Analytical Results

### Radon test result report for: DAMASCUS HIGH SCHOOL MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7983971	1	2017-12-05 @ 9:00 am	2017-12-08 @ 7:00 am	$0.9 \pm 0.3$	2017-12-12
7983979	103	2017-12-05 @ 4:00 pm	2017-12-08 @ 9:00 am	$2.1 \pm 0.4$	2017-12-12
7983974	103 OFFICE	2017-12-05 @ 4:00 pm	2017-12-08 @ 9:00 am	$0.8 \pm 0.4$	2017-12-12
7983975	104	2017-12-05 @ 4:00 pm	2017-12-08 @ 9:00 am	< 0.3	2017-12-12
7975318	108	2017-12-05 @ 4:00 pm	2017-12-08 @ 9:00 am	$1.3 \pm 0.4$	2017-12-12
7983976	108	2017-12-05 @ 4:00 pm	2017-12-08 @ 9:00 am	$1.5 \pm 0.4$	2017-12-12
7983936	11	2017-12-05 @ 9:00 am	2017-12-08 @ 7:00 am	$0.8 \pm 0.3$	2017-12-12
7983940	11	2017-12-05 @ 9:00 am	2017-12-08 @ 7:00 am	$0.8 \pm 0.3$	2017-12-12
7983988	111	2017-12-05 @ 5:00 pm	2017-12-08 @ 9:00 am	$1.4 \pm 0.3$	2017-12-12
7983981	112	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	$1.6 \pm 0.3$	2017-12-12
7983982	112A	2017-12-05 @ 5:00 pm	2017-12-08 @ 9:00 am	$1.5 \pm 0.4$	2017-12-12
7983803	114	2017-12-05 @ 9:00 am	2017-12-08 @ 9:00 am	$0.5 \pm 0.3$	2017-12-12
7983801	115	2017-12-05 @ 5:00 pm	2017-12-08 @ 9:00 am	$0.8 \pm 0.3$	2017-12-12
7983802	115	2017-12-05 @ 5:00 pm	2017-12-08 @ 9:00 am	$0.6 \pm 0.3$	2017-12-12
7983814	115	2017-12-05 @ 5:00 pm	2017-12-08 @ 9:00 am	< 0.3	2017-12-12
7975306	116	2017-12-05 @ 4:00 pm	2017-12-08 @ 9:00 am	$0.5 \pm 0.3$	2017-12-12
7983805	117	2017-12-05 @ 5:00 pm	2017-12-08 @ 9:00 am	$0.6 \pm 0.3$	2017-12-12
7983980	118 OFFICE	2017-12-05 @ 4:00 pm	2017-12-08 @ 9:00 am	$0.5 \pm 0.3$	2017-12-12
7983806	119	2017-12-05 @ 5:00 pm	2017-12-08 @ 9:00 am	< 0.3	2017-12-12
7983807	119 OFFICE	2017-12-05 @ 5:00 pm	2017-12-08 @ 9:00 am	< 0.3	2017-12-12
7983945	12	2017-12-05 @ 9:00 am	2017-12-08 @ 7:00 am	$1.7 \pm 0.4$	2017-12-12
7983989	120	2017-12-05 @ 4:00 pm	2017-12-08 @ 9:00 am	$4.1 \pm 0.4$	2017-12-12
7983972	121	2017-12-05 @ 4:00 pm	2017-12-08 @ 9:00 am	$4.5 \pm 0.5$	2017-12-12
7983949	130	2017-12-05 @ 1:00 pm	2017-12-08 @ 8:00 am	$0.7 \pm 0.3$	2017-12-12
7983950	130	2017-12-05 @ 1:00 pm	2017-12-08 @ 8:00 am	$0.9 \pm 0.3$	2017-12-12
7983952	131	2017-12-05 @ 1:00 pm	2017-12-08 @ 8:00 am	$0.7 \pm 0.3$	2017-12-12
7975323	132	2017-12-05 @ 12:00 pm	2017-12-08 @ 8:00 am	$1.1 \pm 0.4$	2017-12-12
7983948	133	2017-12-05 @ 1:00 pm	2017-12-08 @ 8:00 am	$0.7 \pm 0.3$	2017-12-12
7975320	134	2017-12-05 @ 12:00 pm	2017-12-08 @ 9:00 am	$0.8 \pm 0.3$	2017-12-12
7983990	136	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	$1.0 \pm 0.3$	2017-12-12
7975307	137	2017-12-05 @ 3:00 pm	2017-12-08 @ 8:00 am	$1.6 \pm 0.4$	2017-12-12
7975313	139	2017-12-05 @ 2:00 pm	2017-12-08 @ 8:00 am	$1.5 \pm 0.4$	2017-12-12
7975309	140	2017-12-05 @ 2:00 pm	2017-12-08 @ 8:00 am	$1.3 \pm 0.4$	2017-12-12
7983964	141	2017-12-05 @ 2:00 pm	2017-12-08 @ 8:00 am	$1.7 \pm 0.4$	2017-12-12
7983953	143	2017-12-05 @ 1:00 pm	2017-12-08 @ 8:00 am	$1.2 \pm 0.4$	2017-12-12
7983924	144	2017-12-05 @ 2:00 pm	2017-12-08 @ 8:00 am	$1.4 \pm 0.4$	2017-12-12
7983961	145	2017-12-05 @ 1:00 pm	2017-12-08 @ 10:00 am	$1.4 \pm 0.3$	2017-12-12

### Radon test result report for: DAMASCUS HIGH SCHOOL MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7983965	146	2017-12-05 @ 1:00 pm	2017-12-08 @ 9:00 am	$1.4 \pm 0.4$	2017-12-12
7983941	147	2017-12-05 @ 9:00 am	2017-12-08 @ 7:00 am	$2.3 \pm 0.4$	2017-12-12
7983937	148	2017-12-05 @ 9:00 am	2017-12-08 @ 7:00 am	$1.3 \pm 0.3$	2017-12-12
7983944	149	2017-12-05 @ 9:00 am	2017-12-08 @ 7:00 am	$1.1 \pm 0.4$	2017-12-12
7983942	150	2017-12-05 @ 9:00 am	2017-12-08 @ 7:00 am	$0.9 \pm 0.3$	2017-12-12
7983938	151	2017-12-05 @ 9:00 am	2017-12-08 @ 7:00 am	$0.8 \pm 0.3$	2017-12-12
7983912	152	2017-12-05 @ 11:00 am	2017-12-08 @ 8:00 am	$0.7 \pm 0.3$	2017-12-12
7975314	152	2017-12-05 @ 1:00 pm	2017-12-08 @ 8:00 am	$0.9 \pm 0.3$	2017-12-12
7983911	152	2017-12-05 @ 11:00 am	2017-12-08 @ 8:00 am	$0.9 \pm 0.3$	2017-12-12
7983913	153	2017-12-05 @ 11:00 am	2017-12-08 @ 8:00 am	$0.6 \pm 0.3$	2017-12-12
7983905	154	2017-12-05 @ 11:00 am	2017-12-08 @ 8:00 am	< 0.3	2017-12-12
7983904	155A	2017-12-05 @ 11:00 am	2017-12-08 @ 9:00 am	$1.1 \pm 0.3$	2017-12-12
7983901	155B	2017-12-05 @ 11:00 am	2017-12-08 @ 8:00 am	$0.7 \pm 0.3$	2017-12-12
7983903	156	2017-12-05 @ 11:00 am	2017-12-08 @ 8:00 am	$0.7 \pm 0.3$	2017-12-12
7983902	157	2017-12-05 @ 11:00 am	2017-12-08 @ 8:00 am	$0.8 \pm 0.4$	2017-12-12
7983926	158	2017-12-05 @ 10:00 am	2017-12-08 @ 7:00 am	< 0.3	2017-12-12
7983916	159	2017-12-05 @ 10:00 am	2017-12-08 @ 7:00 am	< 0.3	2017-12-12
7983917	160	2017-12-05 @ 10:00 am	2017-12-08 @ 7:00 am	$0.7 \pm 0.3$	2017-12-12
7983925	161	2017-12-05 @ 10:00 am	2017-12-08 @ 7:00 am	< 0.3	2017-12-12
7983947	163	2017-12-05 @ 9:00 am	2017-12-08 @ 7:00 am	$0.7 \pm 0.3$	2017-12-12
7975319	165	2017-12-05 @ 1:00 pm	2017-12-08 @ 8:00 am	$0.6 \pm 0.3$	2017-12-12
7983943	166	2017-12-05 @ 9:00 am	2017-12-08 @ 7:00 am	$0.8 \pm 0.3$	2017-12-12
7983908	170	2017-12-05 @ 11:00 am	2017-12-08 @ 7:00 am	< 0.3	2017-12-12
7983910	170	2017-12-05 @ 11:00 am	2017-12-08 @ 7:00 am	$0.5 \pm 0.3$	2017-12-12
7983931	182	2017-12-05 @ 10:00 am	2017-12-08 @ 7:00 am	< 0.3	2017-12-12
7983921	182	2017-12-05 @ 10:00 am	2017-12-08 @ 7:00 am	$3.0 \pm 0.4$	2017-12-12
7983969	2	2017-12-05 @ 9:00 am	2017-12-08 @ 7:00 am	$0.6 \pm 0.3$	2017-12-12
7983808	223	2017-12-05 @ 5:00 pm	2017-12-08 @ 10:00 am	$0.8 \pm 0.4$	2017-12-12
7983804	224	2017-12-05 @ 5:00 pm	2017-12-08 @ 10:00 am	$0.6 \pm 0.3$	2017-12-12
7983824	227	2017-12-05 @ 5:00 pm	2017-12-08 @ 10:00 am	$0.7 \pm 0.3$	2017-12-12
7983816	227	2017-12-05 @ 10:00 am	2017-12-08 @ 10:00 am	< 0.3	2017-12-12
7983831	229	2017-12-05 @ 10:00 am	2017-12-08 @ 10:00 am	$0.7 \pm 0.3$	2017-12-12
7983825	230	2017-12-05 @ 5:00 pm	2017-12-08 @ 10:00 am	$1.0 \pm 0.4$	2017-12-12
7983809	232	2017-12-05 @ 5:00 pm	2017-12-08 @ 10:00 am	$1.1 \pm 0.4$	2017-12-12
7983822	240	2017-12-05 @ 10:00 am	2017-12-08 @ 10:00 am	< 0.3	2017-12-12
7983821	241	2017-12-05 @ 10:00 am	2017-12-08 @ 10:00 am	< 0.3	2017-12-12
7983823	243	2017-12-05 @ 10:00 am	2017-12-08 @ 10:00 am	< 0.3	2017-12-12

### Radon test result report for: DAMASCUS HIGH SCHOOL MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7983826	244	2017-12-05 @ 10:00 am	2017-12-08 @ 10:00 am	< 0.3	2017-12-12
7983832	249	2017-12-05 @ 6:00 pm	2017-12-08 @ 10:00 am	$0.8 \pm 0.3$	2017-12-12
7983830	253	2017-12-05 @ 6:00 pm	2017-12-08 @ 10:00 am	$0.9 \pm 0.3$	2017-12-12
7983970	3	2017-12-05 @ 9:00 am	2017-12-08 @ 7:00 am	$1.3 \pm 0.3$	2017-12-12
7983968	4	2017-12-05 @ 9:00 am	2017-12-08 @ 7:00 am	$0.7 \pm 0.3$	2017-12-12
7983932	5	2017-12-05 @ 9:00 am	2017-12-08 @ 7:00 am	$1.1 \pm 0.3$	2017-12-12
7983933	7	2017-12-05 @ 9:00 am	2017-12-08 @ 7:00 am	< 0.3	2017-12-12
7983934	8	2017-12-05 @ 9:00 am	2017-12-08 @ 7:00 am	$1.0 \pm 0.3$	2017-12-12
7983939	9	2017-12-05 @ 9:00 am	2017-12-08 @ 7:00 am	$1.1 \pm 0.3$	2017-12-12
7983927	AD OFFICE	2017-12-05 @ 10:00 am	2017-12-08 @ 7:00 am	$2.7 \pm 0.4$	2017-12-12
7983958	ADMIN CONF	2017-12-05 @ 2:00 pm	2017-12-08 @ 8:00 am	$1.2 \pm 0.3$	2017-12-12
7975310	ADMIN SECRET	2017-12-05 @ 2:00 pm	2017-12-08 @ 8:00 am	$1.2 \pm 0.4$	2017-12-12
7983960	AP1	2017-12-05 @ 2:00 pm	2017-12-08 @ 8:00 am	$1.6 \pm 0.4$	2017-12-12
7983955	AP2	2017-12-05 @ 2:00 pm	2017-12-08 @ 8:00 am	$1.7 \pm 0.4$	2017-12-12
7983957	AP3	2017-12-05 @ 2:00 pm	2017-12-08 @ 8:00 am	$1.1 \pm 0.3$	2017-12-12
7983954	ATTENDANCE	2017-12-05 @ 3:00 pm	2017-12-08 @ 8:00 am	$1.1 \pm 0.4$	2017-12-12
7983977	AUDITORIUM	2017-12-05 @ 4:00 pm	2017-12-08 @ 9:00 am	$3.2 \pm 0.4$	2017-12-12
7983973	AUDITORIUM	2017-12-05 @ 4:00 pm	2017-12-08 @ 9:00 am	$2.7 \pm 0.4$	2017-12-12
7983992	AUDITORIUM	2017-12-05 @ 4:00 pm	2017-12-08 @ 9:00 am	$3.0 \pm 0.4$	2017-12-12
7983984	AUDITORIUM	2017-12-05 @ 4:00 pm	2017-12-08 @ 9:00 am	$3.5 \pm 0.4$	2017-12-12
7983907	BOYS PE OFFICE	2017-12-05 @ 11:00 am	2017-12-08 @ 7:00 am	$2.5 \pm 0.4$	2017-12-12
7983909	BSO	2017-12-05 @ 11:00 am	2017-12-08 @ 7:00 am	$1.6 \pm 0.4$	2017-12-12
7983923	<b>BUSIN MNGR</b>	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	$1.5 \pm 0.3$	2017-12-12
7983986	CAFE	2017-12-05 @ 4:00 pm	2017-12-08 @ 9:00 am	$2.1 \pm 0.4$	2017-12-12
7983987	CAFE	2017-12-05 @ 4:00 pm	2017-12-08 @ 9:00 am	$2.2 \pm 0.4$	2017-12-12
7975315	CO	2017-12-05 @ 11:00 am	2017-12-08 @ 8:00 am	$1.0 \pm 0.3$	2017-12-12
7983959	COMP OFFICE	2017-12-05 @ 2:00 pm	2017-12-08 @ 9:00 am	$1.5 \pm 0.4$	2017-12-12
7983966	COMP OFFICE	2017-12-05 @ 2:00 pm	2017-12-08 @ 8:00 am	$1.1 \pm 0.3$	2017-12-12
7983865	COUNS 1	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-12
7983991	COUNS.1	2017-12-05 @ 3:00 pm	2017-12-08 @ 8:00 am	$0.7 \pm 0.3$	2017-12-12
7983995	COUNS1	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	< 0.3	2017-12-12
7983996	COUNS2	2017-12-05 @ 3:00 pm	2017-12-08 @ 8:00 am	$0.7 \pm 0.3$	2017-12-12
7983998	COUNS3	2017-12-05 @ 3:00 pm	2017-12-08 @ 8:00 am	$1.1 \pm 0.3$	2017-12-12
7983997	COUNS4	2017-12-05 @ 3:00 pm	2017-12-08 @ 8:00 am	$0.8 \pm 0.3$	2017-12-12
7983985	COUNS5	2017-12-05 @ 3:00 pm	2017-12-08 @ 8:00 am	$0.9 \pm 0.3$	2017-12-12
7984000	GUID. CONF.RM	2017-12-05 @ 3:00 pm	2017-12-08 @ 9:00 am	$0.8 \pm 0.3$	2017-12-12
7983922	GYM1	@	@		

### Radon test result report for: DAMASCUS HIGH SCHOOL MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7983929	GYM1	2017-12-05 @ 10:00 am	2017-12-08 @ 7:00 am	$2.0 \pm 0.3$	2017-12-12
7983906	GYM1	2017-12-05 @ 10:00 am	2017-12-08 @ 7:00 am	$1.7 \pm 0.4$	2017-12-12
7983918	GYM2	2017-12-05 @ 10:00 am	2017-12-08 @ 7:00 am	$1.5 \pm 0.3$	2017-12-12
7983919	GYM2	2017-12-05 @ 10:00 am	2017-12-08 @ 7:00 am	$2.0 \pm 0.3$	2017-12-12
7983920	GYM2	2017-12-05 @ 10:00 am	2017-12-08 @ 7:00 am	$1.8 \pm 0.3$	2017-12-12
7983928	GYM2	2017-12-05 @ 10:00 am	2017-12-08 @ 7:00 am	$1.7 \pm 0.3$	2017-12-12
7975321	HUB	2017-12-05 @ 1:00 pm	2017-12-08 @ 8:00 am	$0.7 \pm 0.3$	2017-12-12
7975316	IMC WORKROOM	2017-12-05 @ 1:00 pm	2017-12-08 @ 8:00 am	< 0.3	2017-12-12
7983956	NURSE	2017-12-05 @ 2:00 pm	2017-12-08 @ 8:00 am	$1.1 \pm 0.3$	2017-12-12
7984045	OFFICE BLANK	2017-12-05 @ 1:00 pm	2017-12-08 @ 1:00 pm	< 0.3	2017-12-12
7984047	OFFICE BLANK	2017-12-05 @ 1:00 pm	2017-12-08 @ 1:00 pm	< 0.3	2017-12-12
7975311	PRINCIPAL	2017-12-05 @ 2:00 pm	2017-12-08 @ 8:00 am	$1.2 \pm 0.3$	2017-12-12
7975312	PRINCIPAL	2017-12-05 @ 2:00 pm	2017-12-08 @ 8:00 am	$1.2 \pm 0.3$	2017-12-12
7983993	REGISTRAR	2017-12-05 @ 3:00 pm	2017-12-08 @ 8:00 am	$1.1 \pm 0.3$	2017-12-12
7975308	SIDE OFFICE	2017-12-05 @ 3:00 pm	2017-12-08 @ 8:00 am	$1.2 \pm 0.4$	2017-12-12
7983963	SPEC. ED. CONF.	2017-12-05 @ 2:00 pm	2017-12-08 @ 10:00 am	$0.9 \pm 0.3$	2017-12-12
7983915	WEIGHT ROOM	2017-12-05 @ 11:00 am	2017-12-08 @ 7:00 am	$1.9 \pm 0.4$	2017-12-12
7983930	GYM1	(a)	@		



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

# **Radon Test Kit Chain of Custody**

#### Project Name: MCPS Radon Phase

#### Names of Schools:

- 1. John T. Baker Middle School
- 2. Cedar Grove Elementary School
- 3. Clarksburg Elementary School
- 4. Clarksburg Elementary School Annex
- 5. Clarksburg High School
- 6. Clearspring Elementary School
- 7. Damascus Elementary School
- 8. Damascus High School
- 9. Dr. Charles R. Drew Elementary School
- 10. Facilities Maintenance Depot Shop
- 11. Lake Seneca Elementary School
- 12. Laytonsville Elementary School
- 13. Watkins Mill Elementary School
- 14. Watkins Mill High School

	Date	Initials
Radon Test Kits Deployed	12/05/17	IM
Radon Test Kits Collected	12/08/17	IM
Radon Test Kits Shipped to Lab*	12/08/17	VM
Radon Test Kits Received by Lab*	12/13/17	UM

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

15. Whetstone Elementary School

Radon test result report for: TRANSIT 2 MAIN

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

### Radon test result report for:

MCPS - Spike Sample Laboratory Results. Measured values are satisfactory, i.e. within ±25% of the chamber's reference value (27.7 pCi/L).

Kit #	Room Id	Started		Ended	pCi/L	Analyzed
7975075	<b>S</b> 1	2017-12-01	@ 11:00 am	2017-12-04 @ 11:00 am	$25.6 \pm 0.7$	2017-12-07
7975064	S2	2017-12-01	@ 11:00 am	2017-12-04 @ 11:00 am	$27.4 \pm 0.8$	2017-12-07
7975063	<b>S</b> 3	2017-12-01	@ 11:00 am	2017-12-04 @ 11:00 am	$26.3 \pm 0.7$	2017-12-07
7975065	<b>S</b> 4	2017-12-01	@ 11:00 am	2017-12-04 @ 11:00 am	$23.0 \pm 0.7$	2017-12-07
7975069	<b>S</b> 5	2017-12-01	@ 11:00 am	2017-12-04 @ 11:00 am	$25.6 \pm 0.7$	2017-12-07
7975070	<b>S</b> 6	2017-12-01	@ 11:00 am	2017-12-04 @ 11:00 am	$23.0 \pm 0.7$	2017-12-07

<b>EXPOSURE IN BOWSER-</b> M	<b>MORNER RA</b>	DON CHAMBER	
CLIENT KCI Technolog	lies Inc.	Job Number 182393	3
NOMINAL Conditions: Radon Conc 27. 7			
Date Start: 12/11 Date Stop: 12/4/1-	) Date Start:	Date Stop:	
Time Start: 1949 Time Stop: 1949	8		
Device No.'s: (6) Chan. Bags.	Device No.'s:_		
7975075, 7975064, 7975063,			
7973065, 1975069, 7975070			
Fy Roht		-	
Date Start: Date Stop:	1	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



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

### MCPS RADON TESTING

### Executive Summary: Damascus High School

Date of Test Report:	10/18/2016
Round of Testing:	Initial
(	Follow-up
	Post Remediation
# Rooms Tested:	29
# Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	2.0

Project Status: Post remediation testing and follow-up testing after HVAC update completed; no further action at this time

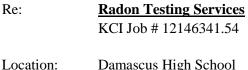


ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

October 18, 2016

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



Location: Damascus High School 25921 Ridge Road Damascus, Maryland 20872

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 Damascus High School, located at 25921 Ridge Road in Damascus, Maryland 20872 (subject site).

### **Scope of Services:**

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Safety Board (NRSB) Radon Measurement Specialist (certification #14SS056) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from www.montgomerycountymd.gov/dep/air/radon or www.epa.gov/radon.

KCI visited the site on September 27, 2016 and deployed thirty-seven (37) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on September 30, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

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

These tests represent:

- Post-mitigation testing for radon mitigation systems installed recently,
- Follow-up sampling of a school that had HVAC modifications over the summer.

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)
- Determine if the HVAC project changed previously detected radon levels

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

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

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

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

### **Results:**

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
≥4.0 piC/L	none	n/a
<4.0 piC/L	See Attachn	nent 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.

Mr. Richard Cox October 18, 2016 Page 4

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 Makler

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

Attachments:

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

# ATTACHMENT A

Floor Plan With Test Locations

# ATTACHMENT B

# Radon Test Summary Spreadsheet

	Radon Testing Results					
Damascus High School						
	Test Period: 09/27/16-09/30/16					
Kit Number	Room / Area	Result				
7802267	102	< 0.3				
7802256	102	0.8				
7802265	103	< 0.3				
7802257	105	< 0.3				
7802292	108	< 0.3				
7802300	109	0.8				
7802279	110	< 0.3				
7802255	111	< 0.3				
7802262	111	< 0.3				
7802288	116	0.6				
7802273	117	< 0.3				
7802261	119	< 0.3				
7802289	144	1.0				
7802295	164	< 0.3				
7802280	165	< 0.3				
7802298	166	< 0.3				
7802282	ASST PRIN 3	0.9				
7802285	ASST PRINC 1	0.7				
7802294	ASST PRINC2	0.7				
7802281	ATTENDANCE	< 0.3				
7801952	AUDITORIUM	0.8				
7802274	AUDITORIUM	0.9				
7802277	AUDITORIUM	0.9				
7802275	BUSINESS MANAGER	0.8				
7802283	BUSINESS OFFICE	0.5				
7802291	CAFETERIA	2.0				
7802293	CAFETERIA	1.4				
7802260	FINANCIAL ASST	0.5				
7802286	MAIL ROOM	< 0.3				
7802299	NURSE	0.6				
7802287	SPARE ROOM	0.6				
7802284	SPEC EDU CONF	< 0.3				
7802276	STAFF LOUNGE	2.0				

Radon Testing Results				
	Damascus High School Test Period: 09/27/16-09/30/16			
	Test Period: 09/27/16-09/30/16			
Kit Number	QC Type	Result		
7801951	D (102)	< 0.3		
7802290	D (117)	< 0.3		
7802296	D (NURSE)	< 0.3		
7802297	FB (NURSE)	< 0.3		

# ATTACHMENT C

# Laboratory Analytical Results

### Radon test result report for: DAMASCUS HIGH SCHOOL MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7802267	102	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7801951	102	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802256	103	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	$0.8 \pm 0.3$	2016-10-03
7802265	104	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802257	105	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802292	108	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802300	109	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	$0.8 \pm 0.2$	2016-10-03
7802279	110	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802255	111	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802262	111	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802288	116	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	$0.6 \pm 0.2$	2016-10-03
7802273	117	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802290	117	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802261	119	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802289	144	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	$1.0 \pm 0.3$	2016-10-03
7802295	164	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802280	165	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802298	166	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802282	ASST PRIN 3	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	$0.9 \pm 0.2$	2016-10-03
7802285	<b>ASST PRINC 1</b>	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	$0.7 \pm 0.2$	2016-10-03
7802294	ASST PRINC2	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	$0.7 \pm 0.2$	2016-10-03
7802281	ATTENDANCE	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802293	CAFE	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	$1.4 \pm 0.2$	2016-10-03
7802277	AUDITORIUM	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	$0.9 \pm 0.2$	2016-10-03
7802274	AUDITORIUM	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	$0.9 \pm 0.2$	2016-10-03
7802291	CAFE	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	$2.0 \pm 0.3$	2016-10-03
7801952	AUDITORIUM	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	$0.8 \pm 0.2$	2016-10-03
7802275	BUSINESS MANAGER	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	$0.8 \pm 0.2$	2016-10-03
7802283	<b>BUSINESS OFFICE</b>	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	$0.5 \pm 0.2$	2016-10-03
7802260	FINANCIAL ASST	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	$0.5 \pm 0.2$	2016-10-03
7802286	MAIL ROOM	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802299	NURSE	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	$0.6 \pm 0.2$	2016-10-03
7802296	NURSE	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802297	NURSE	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802287	SPARE ROOM	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	$0.6 \pm 0.2$	2016-10-03
7802284	SPEC EDU CONF	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802276	STAFF LOUNGE	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	$2.0 \pm 0.3$	2016-10-03

### Radon test result report for: MCPS Radon Phase 18 Office Blanks

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

### Radon test result report for: MCPS Radon Phase 18 Transit Blanks

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

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

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

s Inc. Job Number 176788
pCi/L Rel. Hum <u>49.6</u> % Temp. <u>70.0</u> F
Date Start: Date Stop:
Time Start: Time Stop:
Device No.'s:
۶
Date Start: Date Stop:
Time Start: Time Stop:
Device No.'s:
Date Start: Date Stop:
Time Start: Time Stop:
Device No.'s:
·

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



Engineers • Planners • Scientists • Construction Managers

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

# **Radon Test Kit Chain of Custody**

Project Name: MCPS Radon Phase 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	M
Radon Test Kits Collected	9/29/16	IM
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



Engineers • Planners • Scientists • Construction Managers

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

# Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 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

	Date	Initials
Radon Test Kits Deployed	9/27/16	U.M
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 – ADDITIONAL FOLLOW-UP DAMASCUS HIGH SCHOOL

# 25921 Ridge Road, Damascus, Maryland 20872

## EXECUTIVE SUMMARY

Date of Test Report:	4/20/16 Follow-Up
Round of Testing:	Initial
	Follow-up
	Post Remediation
# Rooms Tested	8
# Rooms <u>≥</u> 4.0 pCi/L:	1
Low Value:	1.5
High Value:	10.4
Confirmed Rooms ≥ 4.0 pCi/L US EPA	3
Action Level	

## Summary of Sampling Events ≥ 4.0 pCi/L

Room	Result (pCi/L)	Result (pCi/L)	Result (pCi/L)	Average
	1/26/16 Initial	3/21/16 Follow-Up	4/20/16 Follow-Up	Result (pCi/L)
Assistant	1.6	2.0	1.6	1.8
Principal 1				
(Attendance)				
Assistant	2.3	3.0	2.2	2.5
Principal 2				
Assistant	12.3	1.8	10.4	8.2
Principal 3				
Assistant	3.0	6.0	1.5	3.5
Principal 4				
152	No Access	No Access	2.4	2.4
Nurse	4.8	4.0	Not Sampled	4.4
143	Missing	0.9	Not Sampled	0.9
143	Missing	1.3	Not Sampled	1.3
143 OFF	Missing	No Access	Not Sampled	n/a
149	Missing	1.1	Not Sampled	1.1
150	Missing	<0.3	Not Sampled	<0.3
160	Missing	0.8	Not Sampled	0.8
Coach Office 1	Missing	1.8 Tampered	2.1	2.0
Coach Office 2	2.8	Not Sampled	2.4	2.6
Guidance	Missing	<0.3	Not Sampled	<0.3
Gym 1	Missing	Missing	Not Sampled	n/a
101	No access	0.7	Not Sampled	0.7
103	No access	0.8	Not Sampled	0.8
105	No access	<0.3	Not Sampled	<0.3

106	No access	No Access	Not Sampled	n/a
109	No access	No Access	Not Sampled	n/a
110	No access	<0.3	Not Sampled	<0.3
113	No access	<0.3	Not Sampled	<0.3
164	No access	3.4	Not Sampled	3.4
165	No access	6.1 Tampered	3.9	5.0
Security	No access	0.6	Not Sampled	0.6

n/a - location will be sampled at the time of post-remediation sampling



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

### MCPS RADON TESTING

### Executive Summary: Damascus High School

Date of Test Report:	4/20/2016
Round of Testing:	Initial
(	Follow-up
	Post Remediation
# Rooms Tested:	8
# Rooms $\geq$ 4.0 pCi/L:	1
Low Value:	1.5
High Value:	10.4

Rooms with results  $\geq$  4.0 pCi/L: Assistant Principal 3 (10.4 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.

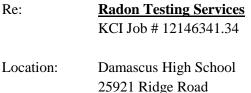


ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

April 20, 2016

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



Damascus, Maryland 20872

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 Damascus High School, located at 25921 Ridge Road in Damascus, Maryland 20872 (subject site).

### **Scope of Services:**

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Safety Board (NRSB) Radon Measurement Specialist (certification #14SS056) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from www.montgomerycountymd.gov/dep/air/radon or www.epa.gov/radon.

KCI visited the site on March 29, 2016 and deployed nine (9) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on April 1, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to AccuStar Labs for analysis by gamma-ray spectroscopy. Accustar Labs is a NRSB certified analytical laboratory for radon analysis (certification # ARL0007) located at 929 Mount

Zion Road, Lebanon, Pennsylvania.

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

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

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

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

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

#### **Results:**

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result			
≥4.0 piC/L	Assistant Principal 3	10.4			
<4.0 piC/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 (410) 316-7800.

Mr. Richard Cox April 20, 2016 Page 4

Sincerely,

James Makler

James M. Moulsdale 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 13 testing. Office blanks were not submitted under each school individually.

	Radon Testing Results Damascus High School Test Period: 03/29/16-04/01/16					
Kit Number	Room / Area	Result				
3029292	152	2.4				
3029276	152	1.7				
3029226	165	3.9				
3029299	ASSIST. PRINCIPAL #2	2.2				
3029226	ASSIST. PRINCIPAL #1	1.6				
3029230	ASSIST. PRINCIPAL #3	10.4				
3029229	ASSIST. PRINCIPAL #4	1.5				
3029228	COACH OFFICE 1	2.1				
3029236	COACH OFFICE 2	2.4				

### ATTACHMENT C

### Laboratory Analytical Results



#### NRPP 10511AL NRSB ARL0007

Laboratory Report for:

Radon in Air

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

Property Tested: Project # 12146341

KCI Technologies	Damascus H. S.
936 Ridgebrook Rd	25921 Ridge Rd
Sparks MD 21152	Damascus MD 20872

Log Nur	) mber	Device Number	Test Exposur	e Duration:	Area Tested	Result (pCi/L)
301	9509	3029228	03/29/2016 8:36 am	04/01/2016 8:04 a	n Coach Office 1 Basement	2.1
301	9510	3029236	03/29/2016 8:39 am	04/01/2016 8:35 a	n Coach Office 2 Basement	2.7
301	9511	3029226	03/29/2016 8:48 am	04/01/2016 8:39 a	n Unit 165 First Floor	3.9
301	9512	3029299	03/29/2016 8:55 am	04/01/2016 8:47 a	m Asst. Principal #2 First Floor	2.2
301	9513	3029224	03/29/2016 9:14 am	04/01/2016 8:48 a	m Asst. Principal #1 First Floor	1.6
301	9514	3029230	03/29/2016 9:18 am	04/01/2016 8:46 a	n Asst. Principal #3 First Floor	10.4
301	9515	3029229	03/29/2016 9:22 am	04/01/2016 8:44 a	n Asst. Principal #4 First Floor	1.5
301	9516	3029276	03/29/2016 9:27 am	04/01/2016 8:42 a	n Unit 152 First Floor	1.7
301	9517	3029292	03/29/2016 9:29 am	04/01/2016 8:42 a	n Unit 152 First Floor	2.4

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

Distributed by: KCI Technologies, Inc.

Date Received: 04/05/2016 Date Logged:

aed: 04/05/2016

Date Analyzed: 04/05/2016 Date Reported

Date Reported: 04/06/2016

Report Reviewed By: Course Bates

Report Approved By: Couche A. Koho Carolyn D. Koke, President, 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.

Send Writt	Send Written Report To:	:0		S	Site Tested:			Contac	Contact Information:		
Name	KCI Tec	KCI Technologies, Inc	nc	٥ ٥	Site Name	Damazus H.S.	+.5.	Contact		Tehsin Aurangabadwala	_
Address	936 Rid	936 Ridgebrook Road	ad	Ā	Address	25421 R.d.	Ridge Rd.	Telephone	ane 410-891-1726	1-1726	
Address				Ā	Address	,					
City / Town	Sparks			O	City / Town	Damascus		Technician	lan		
State/Provii	State/Province Postal Code	MD	21152	ö	tate/Province P	State/Province Postal Code MD	21806	Cert. Number	Imber		
Report Cou	Report Country Baltimore County	re County		F	Test Country N	Montgomery County	nty	Signature	e		
Email Addr	Email Address tehsin@kci.com	)kci.com		•	Project Number 12146341	12146341			Comparison of the second s		
Lab Use Only	Device Number	Building Number	Unit Number	Floor	Name	Name of Room Temp	Start Date	Start Time	Stop Date	Stop Time	Lab Use Only
	3029228			0	Coach office 1		5	08:36	4/01/16	M8:04	
	302 9236			0		2		08:34		08:35	
	3029226		165					08:48		02:34	
	3029299			(	Assist. Principa (#2	nciper  #2		08,55		08:47	
	3029224			}	Assist. Principel #2	T#1		64:14		08:46	
	3029230			_	Assist. Priv	Principa (#3		04:18		05:46	
	3024229				Assist. Priv	Principal#4		09:22		D5:44	
	3029276		152			-		LZ:60		08:42	
	3029292		152	-		1	$\rightarrow$	09:29	$\rightarrow$	08:42	

on your device or test results will be invalid

Ī

Test must start before the expiration date sh

Rev E1512



### Radon in Air

NRPP 10511AL NRSB ARL0007	EPA Method #402-R-92-004 Charcoal Canister NRPP Device Code 6048
Laboratory Report for:	NRSB Device Code 10317 Property Tested: Project # 12146341
KCI Technologies	MCPS PHASE 13 Office Blank

KCI Technologies 936 Ridgebrook Rd Sparks MD 21152

Log Number	Device Number	Test Exposu	re Duration:	Area Tested	Result (pCi/L)
3019508	3029183	03/29/2016 9:40 am	04/01/2016 9:40 am	Office First Floor	<0.4

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

Distributed by: KCI Technologies, Inc.

Date Received: 04/05/2016 Date Logged:

04/05/2016

Date Analyzed: 04/05/2016

Date Reported: 04/05/2016

**Disclaimer:** 

Report Reviewed By: <u>Shace Laburly</u> Report Approved By: <u>Guoly D. Koke</u> Carolyn D. Koke President Carolyn D. Koke, President, AccuStar Labs

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

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

Professional Radion Laboratory Survices Sinor 1984 Medway MA 02053

Send Written Report To:

KCI Technologies, Inc 936 Ridgebrook Road

> Address Address

Name

888-480-8812 Radon Device Type Open Face Canister www.accustarlabs.com

## Site Tested:

Site Name	KCI OFFICE
Address	ASL RIDGEBROOK RD.
Address	
City / Town	SPIRILS
State/Province	State/Province Postal Code MD 7 (152
Test Country	Montgomery County

Project Number 12146341

21152

State/Province Postal Code MD Report Country Baltimore County Email Address tehsin@kci.com

Sparks

City / Town

# Contact Information:

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

Lab Use Only						
Stop Time	7:40 AM					
Stop Date	4/01/10					
Start Time	gite an Hoille					
Start Date mm/dd/yyyy	70° 3/29/16					
Name of Room	office too					
Floor	]					
Unit Number	0					
Building Number						
Device Number	3023183					
Lab Use Only						

Test must start before the expiration date shown on your device or test results will be invalid



### Radon in Air

	IRPP 10 IRSB AF					EPA Method #402-R-92-004 Charcoal Canister NRPP Device Code 6048 NRSB Device Code 10317
L	abora	tory Report	for:		Property Tested:	
	9	(CI Technolo 936 Ridgebro Sparks MD	•		MCPS Transit Blanks	
	g mber 10588	Device Number 3028953	Test Exposu 01/19/2016 1:00 pm	re Duration: 01/22/2016 9:30 am	Area Tested	Result (pCi/L) < 0.4

Number	Number					
3010588	3028953	01/19/2016 1:00 pm	01/22/2016	9:30 am	1	< 0.4
3010589	3028955	01/19/2016 1:00 pm	01/22/2016	9:30 am	2	< 0.4
3010590	3028954	01/19/2016 1:00 pm	01/22/2016	9:30 am	3	< 0.4
3010591	3028997	01/19/2016 1:00 pm	01/22/2016	9:30 am	4	< 0.4

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

Distributed by: KCI Technologies, Inc. Date Received: 01/27/2016 Date Logged: 01/27/2016 Date Analyzed: 01/28/2016 Date Reported: 01/28/2016 Report Reviewed By: Cruese Bates Report Approved By: Curly D. Koke

#### **Disclaimer:**

Carolyn D. Koke, President, AccuStar Labs The uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

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

Return canisters for analysis to: AccuStar Labs 929 Mt. Zion Rd., Lebanon, PA 1 800-523-4964	Return canisters for analysis to: AccuStar Labs 929 Mt. Zion Rd., Lebanon, PA 17046 RECEIVED JAN <b>2NFORMATION FORM -</b> Large Buildings 800-523-4964 Projects - Apartments	ED JAN 2NFORMAT	uStar Lab ATION FOF Projects -	AccuStar Labs – Lebanon, PA RMATION FORM - Large Build Projects - Apartments	ın, PA Buildings - İts		Instructions on back of form Read instructions carefully Discrepancies will invalidate tests	ck of fo careful invalid	rm ly ate tests	
<b>Test Site Info</b> Name of Buildir	Test Site Info Name of Building/Project or Owner $\overline{n}$	ranset &						0 Q N	Do not use this form in New Jersev or Florida	orm in
Site Address:		and the set is set of the set			Contraction of the second second	THE LEASE PROPERTY.	ad produces	Ca Ca	Call for correct forms.	orms.
City:	and a strength of the strength	State	Zip		County			3		
Projects Contact Name:	t Name: Ser Con	Phone:			Email:	CONTRACTION OF	AND BUT FERRE	Mu	Multi-Page Report Y-N LAB USE ONLY	N-Y
Detector Serial#	ROOM NAME & NUMBER - LOCATION OF DETECTOR ROOM (indicate duplicates and blanks )	CATION OF DETECTOR IN cates and blanks )	Floor	Start Date	Start Time	Stop Date	Stop Time Include AM/PM	Wgt.	Gain	pCi/L
3028953	Trans	3010588	/	1/19/1	N. Jagits	1/22/1/	9130an	Statistics of the local division of the		40:
8955	Traw, t	3010589	-	1/10/16				55}-	V	30.
- 8954	trans, t	3010590	1	1110111			/ .	0		202
E99 C	Transit	3010591	-	1112111	>	2		2	V	54
	appoint avdeal habercostic wellog	and management eventstations -	· Apurat						310012011	
		a operation of the second of t	- Enter		Closeda, gan	KCI Technologies, Inc.	gies, Inc.		9107/17/1	~
	and a subscription of the	Margan darataria kanada				3010588 3028953		ACPC275B E	EXP12/31/2018	
Sector Sector	gree the fight fitter of the fitter	the state of the s								
Structure Type:	(circle one or more) Basement - Crawlspace - Slab on Grade - Other	Ispace - Slab on Grade - Oi	ther	Both Placed b	Both Placed by and Retrieved by signatures are required	I by signatures	are required	Cer	רפנווומת ובמיהיה	# e
Test Purpose:	Initial Screening - Foll	Follow Up Test -		Canisters placed by	aced by				#	101.101
(Circle all that apply)	Post Mitigation - Re	Real Estate - Other								
Building Type:	Residential - Non Residential Private Dav Care - Private Sch	Residential Private School		Canisters retrieved by	irieved by	$\langle$		-	#	
		ol - Public School		Owner waives confidentiality by signing here	onfidentiality	0	Date Weell	19	Were general operating	erating
Send Results To:			4		~	1 11			conalitons maintained ? Yes - No explain if No	explain if NO
Company Name: V	lei Tech	20x	Þ	Attention:	James. 1	Mapcolal			OSe	ilding
Address: 936	Ridgebrock	-121.	£20-0148		Star The root & s	and to show he	ally made with we		conditions maintained?	ained?
1	2	ARGE DERIG ALLER DE	State:	MD Zip	21250	~		-	Yes - No expla	explain if NO
Phone: 110 - 5	79-3826			Fax:				2	Normal Temp. Y	Yes - No
EMAIL Results to:	to James. M	1 ouls dale ( ) k	£. Co	Lon.				2	Normal Humidity Y	Yes - No
Make sure information is complete and correct. If a recolutioniation is connected there is a \$10.00	Make sure information is complete and correct. If a recolution is required there is a \$10.00 recolution is requireded	Mailing: I Shipping: 9	Mailing: PO Box 990 inning: 929 Mt Zion Re	Mailing: PO Box 990 Jonestown, PA 17038 Shinping: 929 Mt Zion Road, Lebanon, PA 17046	PA 17038 1. PA 17046		**: *		12	
וו מ וקטמוטווניוטו וט ורקאייי		80	0-523-496	800-523-4964 fax 717-274-5662 NEHA 10511AL NRSB ARL 0007	362				Revision 5 4/2015	<u>ى</u> ى

6-42

### TCS INDUSTRIES, INC.

(717) 657-7032

**RADON GAS DETECTION** 

www.radondetek.com

4326 Crestview Road, Harrisburg, PA 17112

James Moulsdale KCI 936 Ridgebrook Rd. Sparks, MD 21152 April 04, 2016

Dear Mr. Moulsdale:

The spike exposure data were:

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

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

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

Avg, Temp. was 71FAvg. RHwas 51%Elevationwas 490 feet above sea level

Sincerely,

Cut

Carl H. Distenfeld, CHP



NRPP 10511AL NRSB ARL0007

Laboratory Report for:

**KCI** Technologies

936 Ridgebrook Rd Sparks MD 21152 EPA Method #402-R-92-004 Charcoal Canister NRPP Device Code 6048 NRSB Device Code 10317

Property Tested:

MCPS Radon Spike Sample Laboratory Results

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

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

Distributed by: KCI Technolo	gies, Inc.					
Date Received: 04/07/2016	Date Logged:	04/07/2016	Date Analyzed:	04/07/2016	Date Reported:	04/08/2016
Note: Spike samples are test canisters t They provide a quality control measur tested.	· 1		0			
Report Review Disclaimer: The uncertainty of this radon measu concentrations, sample collection ter		Factors contributing	to uncertainty include s	Carolyn statistical variatio	· ·	ccuStar 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.

PO BOX 990 Jonestown PA 17038 717-274-8310

	[	-)	٦				7	r	<u>т</u>	1		- <u></u>	1	1	T	· · · · ·	T
					The second s			Lab Use Only									
	Tehsin Aurangabadwala	1-1726				1 Na		Stop Time hh:mm am / pm	11:15an					)			
Contact Information:	<u></u>			tian	umber	Le		Stop Date	4/6/16					>			
Contac	Contact	Telephone		Technician				Start Time	11:10an	_				$\uparrow$			
		nd Dr			20850			Start Date	4/4/16					>			
Site Tested:	Site Name MC PS	Address 852 Hurverd	Address	City / Town Rockw/le	State/Province Postal Code MD	Test Country Montgomery County	Project Number 12146341	Name of Room Temp		2	M	J	Ь	9			
labs.com	S	▼	A		S			Floor	1	-		1	-	-			
	JC D	p			21152			Unit Number									
Medway MA 02053	KCI Technologies, Inc	936 Ridgebrook Road			MD	e County	kci.com	Building Number	1		-		<b>.</b>				-
n Report To	KCI Tec	936 Rid(		Sparks	ce Postal Co	try Baltimor	ss tehsin@kci.com	Device Number	3029166	3029214	3029217	3029218	3029219	3029220			
Professional Redon Laboratory Services Since 1984 Send Written Report To:	Name	Address	Address	City / Town	State/Province Postal Code	Report Country Baltimore County	Email Address	Lab Use Only			., .			• - 1			

Test must start before the expiration date shown on your device or test results will be invalid

1 of 1

Rev E1512



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

### MCPS RADON TESTING

### Executive Summary: Damascus High School

Date of Test Report:	3/21/2016
Round of Testing:	Initial
(	Follow-up
	Post Remediation
# Rooms Tested:	20
# Rooms $\geq$ 4.0 pCi/L:	3
Low Value:	< 0.3
High Value:	6.1

Rooms with results  $\geq$  4.0 pCi/L:

Room 165 (6.1 pCi/L), Assistant Principal 4 (6.0 pCi/L), Nurse's Office (4.0 pCi/L).

Project Status:

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

Re-testing completed; locked/inaccessible rooms need testing (Rooms 143 Off., 106, 109, and 152). Re-Re-test needed for initial results  $\geq$  4.0 pCi/L (Room 165).

Re-test needed for compromised samples (Coaches Office)

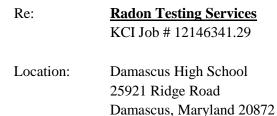


ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

March 21, 2016

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



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 Damascus High School, located at 25921 Ridge Road in Damascus, Maryland 20872 (subject site).

### Scope of Services:

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Safety Board (NRSB) Radon Measurement Specialist (certification #14SS056) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from www.montgomerycountymd.gov/dep/air/radon or www.epa.gov/radon.

KCI visited the site on February 22, 2016 and deployed twenty-six (26) 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:

Radon Concentration	Room	Result
	165	6.1
≥4.0 piC/L	Assistant Principal 4	6.0
_	Nurse's Office	4.0
<4.0 piC/L	See Attachn	nent 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 Mr. Richard Cox March 21, 2016 Page 4

report, please feel free to contact me at (410) 316-7800.

Sincerely,

James Makler

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

Attachments:

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

### ATTACHMENT A

Floor Plan With Test Locations

### ATTACHMENT B

### Radon Test Summary Spreadsheet

### Table Notes:

- AC- Activated Charcoal
- ACI- Air Chek, Inc.
- **D-** Duplicate
- FB- Field Blank
- KCI- KCI Technologies, Inc.
- **OB- Office Blank\***
- PM- Project Manager
- QC- Quality Control

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

	Radon Testing Results Damascus High School	
	Test Period: 02/22/16-02/25/16	
Kit Number	Room / Area	Result
7726717	101	0.7
7726702	103	0.8
7721412	105	< 0.3
7721420	110	< 0.3
7721417	113	< 0.3
7726765	143	0.9
7726763	149	1.1
7721437	150	< 0.3
7726799	160	0.8
7721418	164	3.4
7726771	* 165 (Tampered)	6.1
7731668	ASSIST PRIN	2.0
7726781	ASSIST PRIN 2	3.0
7721419	ASSIST PRIN 3	1.8
7726800	ASSIST PRIN 4	6.0
7721434	* COACH OFFICE (Tampered)	1.8
7726766	GUIDENCE	< 0.3
7721438	* GYM 1 (Missing)	-
7726798	* GYM 1 (Missing)	-
7721421	* GYM 1 (Missing)	-
7721423	* GYM 1 (Missing)	-
7726767	NURSE	4.0
7731077	SECURITY	0.6

	Radon Testing Results	
	Damascus High School	
	Test Period: 02/22/16-02/25/16	
Kit Number	QC Type	Result
7721415	D (143)	1.3
7726759	D (SECURITY)	< 0.3
7721416	FB (150)	< 0.3

.

### ATTACHMENT C

### Laboratory Analytical Results

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

### Radon test result report for: DAMASCUS HIGH SCHOOL MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7726717	101	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	$0.7 \pm 0.3$	2016-02-29
7726702	103	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	$0.8 \pm 0.3$	2016-02-29
7721412	105	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	< 0.3	2016-02-29
7721420	110	2016-02-22 @ 10:00 am	2016-02-25 @ 7:00 am	< 0.3	2016-02-29
7721417	113	2016-02-22 @ 10:00 am	2016-02-25 @ 7:00 am	< 0.3	2016-02-29
7721415	143	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	$1.3 \pm 0.3$	2016-02-29
7726765	143	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	$0.9 \pm 0.3$	2016-02-29
7726763	149	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	$1.1 \pm 0.3$	2016-02-29
7721416	150	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	< 0.3	2016-02-29
7721437	150	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	< 0.3	2016-02-29
7726799	160	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	$0.8 \pm 0.3$	2016-02-29
7721418	164	2016-02-22 @ 10:00 am	2016-02-25 @ 8:00 am	$3.4 \pm 0.4$	2016-02-29
7726771	165	2016-02-22 @ 10:00 am	2016-02-25 @ 8:00 am	$6.1 \pm 0.5$	2016-02-29
7731668	ASSIST PRIN	2016-02-22 @ 8:00 am	2016-02-25 @ 7:00 am	$2.0 \pm 0.4$	2016-02-29
7726781	ASSIST PRIN 2	2016-02-22 @ 8:00 am	2016-02-25 @ 7:00 am	$3.0 \pm 0.4$	2016-02-29
7721419	ASSIST PRIN 3	2016-02-22 @ 9:00 am	2016-02-25 @ 7:00 am	$1.8 \pm 0.4$	2016-02-29
7726800	ASSIST PRIN 4	2016-02-22 @ 9:00 am	2016-02-25 @ 7:00 am	$6.0 \pm 0.5$	2016-02-29
7721434	COACH OFFICE	2016-02-22 @ 9:00 am	2016-02-25 @ 8:00 am	$1.8 \pm 0.4$	2016-02-29
7726766	GUIDENCE	2016-02-22 @ 9:00 am	2016-02-25 @ 7:00 am	< 0.3	2016-02-29
7721421	GYM 1	@	@		
7721423	GYM 1	@	@		
7721438	GYM 1	@	@		
7726798	GYM 1	@	@		
7726767	NURSE	2016-02-22 @ 9:00 am	2016-02-25 @ 7:00 am	$4.0 \pm 0.4$	2016-02-29
7726759	SECURITY	2016-02-22 @ 10:00 am	2016-02-25 @ 8:00 am	< 0.3	2016-02-29
7731077	SECURITY	2016-02-22 @ 10:00 am	2016-02-25 @ 8:00 am	$0.6 \pm 0.3$	2016-02-29

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

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

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

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

### February LABORATORY ANALYSIS 23, 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 LABORATORY ANALYSIS 15, REPORT \*\*

Spike Sample Laboratory Results

Radon test result report for: MCPS

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7718273	101A	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	$6.5 \pm 0.6$	2016-02-04
7718281	102B	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	$6.4 \pm 0.6$	2016-02-04
7718282	103C	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	$6.3 \pm 0.6$	2016-02-04
7718288	104D	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	$6.7 \pm 0.6$	2016-02-04
7718289	105E	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	$6.6 \pm 0.6$	2016-02-04
7718291	106F	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	$6.5 \pm 0.6$	2016-02-04
//102/1	1001	2010 01 50 C 9.00 um	2010 02 01 C 9.00 um	0.5 ± 0.0	2010 02 0

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 Technologie	5 Inc. Job Number 173704
NOMINAL Conditions: Radon Conc 5.9	pCi/L Rel. Hum <u>45.9</u> % Temp. <u>79.0</u> F
Date Start: 1/30/16 Date Stop: 2/1/16	Date Start: Date Stop:
Time Start: <u>9926</u> Time Stop: <u>9926</u>	Time Start: Time Stop:
Device No.'s: (6) Char. Bago-	Device No.'s:
, ופבצורר, הוצבצורר ווצבצורר	
7718288, 7718289, 7718273	
E3 Left	· · · · · · · · · · · · · · · · · · ·
Date Start: Date Stop:	Date Start: Date Stop:
Time Start: Time Stop:	Time Start: Time Stop:
Device No.'s:	Device No.'s:
	-
Date Start: Date Stop:	Date Start: Date Stop:
Time Start: Time Stop:	Time Start: Time Stop:
Device No.'s:	Device No.'s:
	· · · · · · · · · · · · · · · · · · ·

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



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

### Radon Test Kit Chain of Custody

#### Project Name: MCPS Radon Phase 9

#### Name of Schools:

- 1. Rocking Horse Road ES
- 2. Rockwell ES
- 3. Oakland Terrace ES
- 4. Rosemont ES
- 5. Beall ES
- 6. Cresthaven ES
- 7. Quince Orchard HS
- 8. Smith Center
- 9. Ashburton ES
- 10. Bannockburn ES
- 11. Bradley Hills ES
- 12. Cannon Road ES
- 13. Flora M. Singer ES
- 14. Clarksburg HS
- 15. Briggs Chaney MS

- 16. Broad Acres ES
- 17. Belmont ES
- 18. Emory Grove Center
- 19. Forest Knolls ES
- 20. Baker MS
- 21. MLK MS
- 22. Richard Montgomery HS
- 23. Sherwood HS
- 24. Walter Johnson HS
- 25. Diamond ES
- 26. Newport Mill MS
- 27. Drew ES
- 28. Monocacy ES
- 29. Potomac ES
- 30. Rock Terrace School

- 31. Rosa Parks MS
- 32. Rosemary Hills ES
- 33. Sequoyah ES
- 34. Damascus HS
- 35. Einstein ES
- 36. Forest Oak MS
- 37. Hoover MS
- 38. Julius West MS
- 39. John F. Kennedy HS
- 40. Travilah ES
- 41. Watkins Mill HS
- 42. Northwood HS
- 43. Lincoln Center

	Date	Initials
Radon Test Kits Deployed	2/22/16	M
Radon Test Kits Collected	2/25/16	JM
Radon Test Kits Shipped to Lab*	2/25/16	UM
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



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

### Radon Test Kit Chain of Custody

### Project Name: MCPS Radon Phase 9

#### Name of Schools:

- 1. Banneker MS
- 2. Bethesda-Chevy Chase HS
- 3. Burtonsville ES
- 4. Chevy Chase ES
- 5. Clopper Mill ES
- 6. Edison HS
- 7. Flower Hill ES
- 8. Flower Valley ES
- 9. Greencastle ES

- 10. Maryvale ES
- 11. Montgomery Blair HS
- 12. Poolesville HS
- 13. Rachel Carson ES
- 14. Stedwick ES
- 15. Watkins Mill ES
- 16. Laytonsville ES
- 17. Lincoln Center

	Date	Initials
Radon Test Kits Deployed	2/23/16	1M
Radon Test Kits Collected	2/26/16	JM
Radon Test Kits Shipped to Lab*	2/26/16	UM
Radon Test Kits Received by Lab*	3/01/16	JM
*All complex cent to Air Check Inc. 10201	Dutles Dutles Del Mill	D' NC 20750

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



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

### MCPS RADON TESTING

#### Executive Summary: Damascus High School

Date of Test Report:	1/26/2016	
Round of Testing:	Initial	
	Follow-up	
	Post Remediation	
# Rooms Tested:	113	
# Rooms $\geq$ 4.0 pCi/L:	2	
Low Value:	< 0.3	
High Value:	12.3	

Rooms with results  $\geq$  4.0 pCi/L: Assistant Principal (12.3 pCi/L), Nurse (4.8 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.

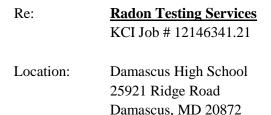


ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

January 26, 2016

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



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 Damascus High School, located at 25921 Ridge Road in Damascus, Maryland 20872 (subject site).

#### Scope of Services:

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Safety Board (NRSB) Radon Measurement Specialist (certification #14SS056) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from www.montgomerycountymd.gov/dep/air/radon or www.epa.gov/radon.

KCI visited the site on December 28, 2015 and deployed one hundred twenty-eight (128) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

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

Butler Bridge Road, Mills River, North Carolina.

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

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

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

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

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

#### **Results:**

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
	Assistant Principal	12.3
≥4.0 piC/L	Nurse 4.8	
<4.0 piC/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.

Mr. Richard Cox January 26, 2016 Page 4

Sincerely,

James Makler

James M. Moulsdale 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	
Tes	Damascus Hs t Period: 12/28/15-12/31/15	
163	ar enda. 12/20/13-12/31/13	
Kit Number	Room / Area	Result
7708489	1	0.7
7708488	2	< 0.3
7708492	3	1.3
7708490	4	< 0.3
7708493	5	< 0.3
7708494	8	< 0.3
7708481	9	1.6
7708479	10	1.6
7708484	11	< 0.3
7708485	12	1.1
7708413	102	0.5
7708408	112	0.6
7708423	112	0.6
7708402	114	< 0.3
7708403	115	< 0.3
7708407	116	0.9
7708433	117	< 0.3
7708496	121	0.9
7708499	121	1.2
7707173	131	< 0.3
7707182	132	0.5
7707156	134	< 0.3
7707186	140	1.3
7707168	145	1.2
7707193	146	1.6
7707158	151	< 0.3
7707157	153	< 0.3
7707155	154	< 0.3
7707185	156	1.8
7707154	157	< 0.3
7707178	158	< 0.3
7707159	161	< 0.3
7707200	162	< 0.3
7707194	163	< 0.3
7707170	170	1.1
7708469	201	< 0.3
7708470	203	0.6
7708463	208	< 0.3
7708466	209	< 0.3
7708486	222	1.1
7708498	228	< 0.3
7708451	230	< 0.3
7708471	241	< 0.3
7708450	244	< 0.3
7708473	254	< 0.3
7707188 *	143 (missing)	0

Table Note: \* Missing or Compromised Sample

	Radon Testing Results				
	Damascus Hs Test Period: 12/28/15-12/31/15				
Kit Number	Room / Area	Result			
7707190	* 143 (missing)	0			
7707189	* 143 OFF (missing)	0			
7707160	146 OFF	1.5			
7707164	* 149 (missing)	0			
7707161	* 150 (missing)	0			
7707177	155A	1.5			
7707153	155B	< 0.3			
7707197	* 160 (missing)	0			
7707181	AD	2			
7708404	ADMIN SEC	1.2			
7708414	ASST PRINCIPAL	12.3			
7708426	ASST PRINCIPAL	2.3			
7708428	ASST PRINCIPAL	3			
7708416	ATTENDANCE	1.6			
7707183	AUDITORIUM	1.1			
7708446	AUDITORIUM	1.3			
7708432	BAND OFFICE	< 0.3			
7708412	BAND ROOM	0.9			
7708421	BAND ROOM	< 0.3			
7707180	BLDG SERV	0.8			
7707162	BUSINESS CONFER	1.6			
7708401	CAFATERIA	0.7			
7708411	CAFATERIA	0.5			
7708429	CAFATERIA	0.8			
7708440	CAFATERIA	0.6			
7707172	CAREER CENTER	< 0.3			
7708442	CHORUS	< 0.3			
7708441	CHORUS ROOM	< 0.3			
7707171	COACH OFFICE	2.8			
7707175	* COACH OFFICE (missing)	0			
7708417	CONFERENCE RM	1.6			
7708500	CONTROL ROOM	1.2			
7707174	DANCE	0.7			
7707179	DANCE	1.1			
7708418	GUIDENCE	< 0.3			
7708435	GUIDENCE	< 0.3			
7708436	GUIDENCE	0.6			
7708437	GUIDENCE	< 0.3			
7708438	GUIDENCE	< 0.3			
7708443	GUIDENCE	0.7			
7708444	GUIDENCE	< 0.3			
7708445	GUIDENCE	0.5			
7708419	* GUIDENCE (missing)	0.5			
7707163	GYM 1	< 0.3			
7707165	GYM 1	1			
7707192	* GYM 1 (missing)	0			
7707184	GYM 2	< 0.3			
	GYM 2 GYM 2	< 0.3			
7707187		1.2			
7707195	GYM 2				
7708424	HEALTH RM	3			

Table Note: \* Missing or Compromised Sample

	Radon Testing Results Damascus Hs							
Τe	Test Period: 12/28/15-12/31/15							
Kit Number	Kit Number Room / Area Result							
7708497	LECTURE ROOM	0.7						
7708487	LECTURE ROOM	0.6						
7708425	MAIL ROOM	3						
7707150	MAIN OFFICE	1.3						
7708448	MAIN OFFICE	2.3						
7708427	NURSE	4.8						
7708434	PRACTICE	< 0.3						
7708409	PRINCIPAL	1						
7708410	SHOP	1.2						
7708430	SHOP	1.1						
7708431	SHOP OFFICE	1.1						
7708406	STAFF LOUNGE	0.6						
7707167	TECH ROOM	< 0.3						
7708420	TECH ROOM	< 0.3						
7707199	WEIGHT	< 0.3						
7707147	WRESTLING	< 0.3						
7707166	WRESTLING	0.6						

	Radon Testing Results					
	Damascus Hs Test Period: 12/28/15-12/31/15					
Kit Number	QC Type	Result				
7708491	D (10)	1.5				
7707176	D (161)	< 0.3				
7708439	D (BAND RM)	< 0.3				
7708405	D (CAFATERIA)	< 0.3				
7708482	D (CONFERENCE ROOM)	1.7				
7708415	D (GUIDENCE)	< 0.3				
7707169	D (GYM 2)	1.2				
7708483	D (MAIN OFFICE)	1.9				
7707191	D (WEIGHT)	< 0.3				
7708478	FB (121)	< 0.3				
7707198	FB (162)	< 0.3				
7708422	FB (BAND ROOM)	< 0.3				
7708477	FB (CAREER CENTER)	< 0.3				
7710526	OB (0)	< 0.3				
7710532	OB (0)	< 0.3				

# ATTACHMENT C

# Laboratory Analytical Results

## Januates LABORATORY ANALYSIS 16, REPORT \*\*

Radon test result report for: DAMASCUS HS MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7710526	0	2015-12-28 @ 3:00 pm	2015-12-31 @ 1:00 pm	< 0.3	2016-01-04
7710532	0	2015-12-28 @ 3:00 pm	2015-12-31 @ 1:00 pm	< 0.3	2016-01-04
7708489	1	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$0.7 \pm 0.3$	2016-01-04
7708491	10	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$1.5 \pm 0.3$	2016-01-04
7708479	10	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$1.6 \pm 0.4$	2016-01-04
7708413	102	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$0.5 \pm 0.3$	2016-01-04
7708484	11	2015-12-28 @ 11:00 am	2015-12-31 @ 11:00 am	< 0.3	2016-01-04
7708423	112	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$0.6 \pm 0.3$	2016-01-04
7708408	112	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$0.6 \pm 0.3$	2016-01-04
7708402	114	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7708403	115	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7708407	116	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$0.9 \pm 0.3$	2016-01-04
7708433	117	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7708485	12	2015-12-28 @ 11:00 am	2015-12-31 @ 11:00 am	$1.1 \pm 0.3$	2016-01-04
7708496	121	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$0.9 \pm 0.3$	2016-01-04
7708499	121	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$1.2 \pm 0.3$	2016-01-04
7708478	121	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7707173	131	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-04
7707182	132	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	$0.5 \pm 0.3$	2016-01-04
7707156	134	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-04
7707186	140	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	$1.3 \pm 0.3$	2016-01-04
7707188	143	@	@		
7707190	143	@	@		
7707189	143 OFF	@	@		
7707168	145	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	$1.2 \pm 0.3$	2016-01-04
7707193	146	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	$1.6 \pm 0.3$	2016-01-04
7707160	146 OFF	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	$1.5 \pm 0.3$	2016-01-04
7707164	149	@	@		
7707161	150	@	@		
7707158	151	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7707157	153	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-04
7707155	154	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-04
7707177	155A	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	$1.5 \pm 0.3$	2016-01-04
7707153	155B	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-04
7707185	156	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	$1.8 \pm 0.4$	2016-01-04
7707154	157	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-04
7707178	158	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04

## January LABORATORY ANALYSIS 16, REPORT \*\*

Radon test result report for: DAMASCUS HS MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7707197	160	@	@		
7707176	161	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7707159	161	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7707198	162	2015-12-28 @ 9:00 am	2015-12-31 @ 11:00 am	< 0.3	2016-01-04
7707200	162	2015-12-28 @ 9:00 am	2015-12-31 @ 11:00 am	< 0.3	2016-01-04
7707194	163	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7707170	170	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	$1.1 \pm 0.3$	2016-01-04
7708488	2	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7708469	201	2015-12-28 @ 12:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-04
7708470	203	2015-12-28 @ 12:00 pm	2015-12-31 @ 11:00 am	$0.6 \pm 0.3$	2016-01-04
7708463	208	2015-12-28 @ 12:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-04
7708466	209	2015-12-28 @ 12:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-04
7708486	222	2015-12-28 @ 12:00 pm	2015-12-31 @ 11:00 am	$1.1 \pm 0.3$	2016-01-04
7708498	228	2015-12-28 @ 12:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-04
7708451	230	2015-12-28 @ 12:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-04
7708471	241	2015-12-28 @ 12:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-04
7708450	244	2015-12-28 @ 12:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-04
7708473	254	2015-12-28 @ 12:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-04
7708492	3	2015-12-28 @ 11:00 am	2015-12-31 @ 11:00 am	$1.3 \pm 0.3$	2016-01-04
7708490	4	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7708493	5	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7708494	8	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7708481	9	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$1.6 \pm 0.3$	2016-01-04
7707181	AD	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	$2.0 \pm 0.4$	2016-01-04
7708404	ADMIN SEC	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	$1.2 \pm 0.3$	2016-01-04
7708426	ASST PRINCIPAL	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	$2.3 \pm 0.4$	2016-01-04
7708428	ASST PRINCIPAL	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	$3.0 \pm 0.4$	2016-01-04
7708414	ASST PRINCIPAL	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	$12.3 \pm 0.8$	2016-01-04
7708416	ATTENDANCE	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	$1.6 \pm 0.3$	2016-01-04
7707183	AUDITORIUM	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$1.1 \pm 0.3$	2016-01-04
7708446	AUDITORIUM	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$1.3 \pm 0.3$	2016-01-04
7708432	BAND OFFICE	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7708439	BAND RM	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7708421	BAND ROOM	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7708422	BAND ROOM	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7708412	BAND ROOM	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	$0.9 \pm 0.3$	2016-01-04
7707180	BLDG SERV	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	$0.8 \pm 0.3$	2016-01-04

## January LABORATORY ANALYSIS 16, REPORT \*\*

Radon test result report for: DAMASCUS HS MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7707162	<b>BUSINESS CONFER</b>	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	$1.6 \pm 0.4$	2016-01-04
7708429	CAFATERIA	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$0.8 \pm 0.3$	2016-01-04
7708401	CAFATERIA	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$0.7 \pm 0.3$	2016-01-04
7708405	CAFATERIA	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7708411	CAFATERIA	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$0.5 \pm 0.3$	2016-01-04
7708440	CAFATERIA	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$0.6 \pm 0.3$	2016-01-04
7707172	CAREER CENTER	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-04
7708477	CAREER CENTER	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7708442	CHORUS	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7708441	CHORUS ROOM	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7707175	COACH OFFICE	@	@		
7707171	COACH OFFICE	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	$2.8 \pm 0.4$	2016-01-04
7708417	CONFERENCE RM	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	$1.6 \pm 0.3$	2016-01-04
7708482	CONFERENCE ROOM	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	$1.7 \pm 0.4$	2016-01-04
7708500	CONTROL ROOM	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$1.2 \pm 0.3$	2016-01-04
7707174	DANCE	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	$0.7 \pm 0.3$	2016-01-04
7707179	DANCE	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	$1.1 \pm 0.3$	2016-01-04
7708419	GUIDENCE	@	@		
7708418	GUIDENCE	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7708415	GUIDENCE	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7708435	GUIDENCE	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7708436	GUIDENCE	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	$0.6 \pm 0.3$	2016-01-04
7708437	GUIDENCE	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7708438	GUIDENCE		2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7708443	GUIDENCE	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	$0.7 \pm 0.3$	2016-01-04
7708444	GUIDENCE	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7708445	GUIDENCE	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	$0.5 \pm 0.3$	2016-01-04
7707192	GYM 1	@	@		
7707163	GYM 1	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7707165	GYM 1	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	$1.0 \pm 0.3$	2016-01-04
7707184	GYM 2	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7707187	GYM 2	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	$1.0 \pm 0.3$	2016-01-04
7707195	GYM 2	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	$1.2 \pm 0.3$	2016-01-04
7707169	GYM 2	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	$1.2 \pm 0.3$	2016-01-04
7708424	HEALTH RM	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	$3.0 \pm 0.4$	2016-01-04
7708487	LECTURE ROOM	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$0.6 \pm 0.3$	2016-01-04
7708497	LECTURE ROOM	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$0.7 \pm 0.3$	2016-01-04

## January LABORATORY ANALYSIS 16, REPORT \*\*

Radon test result report for: DAMASCUS HS MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7708425	MAIL ROOM	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	$3.0 \pm 0.4$	2016-01-04
7707150	MAIN OFFICE	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	$1.3 \pm 0.3$	2016-01-04
7708483	MAIN OFFICE	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	$1.9 \pm 0.4$	2016-01-04
7708448	MAIN OFFICE	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	$2.3 \pm 0.4$	2016-01-04
7708427	NURSE	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	$4.8 \pm 0.5$	2016-01-04
7708434	PRACTICE	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7708409	PRINCIPAL	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	$1.0 \pm 0.3$	2016-01-04
7708430	SHOP	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$1.1 \pm 0.3$	2016-01-04
7708410	SHOP	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$1.2 \pm 0.3$	2016-01-04
7708431	SHOP OFFICE	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$1.1 \pm 0.3$	2016-01-04
7708406	STAFF LOUNGE	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	$0.6 \pm 0.3$	2016-01-04
7708420	<b>TECH ROOM</b>	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7707167	<b>TECH ROOM</b>	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-04
7707191	WEIGHT	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7707199	WEIGHT	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7707147	WRESTLING	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7707166	WRESTLING	2015-12-28 @ 9:00 am	2015-12-31 @ 9:00 am	$0.6 \pm 0.3$	2016-01-04

## Januates LABORATORY ANALYSIS 15, REPORT \*\*

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

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7708218	TRAMSIT 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	<b>TRANSIT 20</b>	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708180	<b>TRANSIT 21</b>	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708183	<b>TRANSIT 22</b>	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	<b>TRANSIT 24</b>	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708177	<b>TRANSIT 25</b>	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708176	<b>TRANSIT 26</b>	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	<b>TRANSIT 28</b>	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

Decembe	LABORATORY ANALYSIS
23,	DEDODT **
2015	<b>REPORT</b> **

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
0	pCi/L Rel. Hum <u>49.6</u> % Temp. <u>69.9</u> F
Date Start: $12/18/15$ Date Stop: $12/21/15$	Date Start: Date Stop:
Time Start: <u>0929</u> Time Stop: <u>0929</u>	Time Start: Time Stop:
Device No.'s: 7705132,7706208,	Device No.'s:
7706211,7706366,	
7706380, 7706381	
F3 Loft	
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:
·	
1	
	-

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



 ENGINEERS
 PLANNERS
 SCIENTISTS
 CONSTRUCTION
 MANAGERS

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

### **Chain of Custody**

### Project Name: MCPS Radon Phase III

Name of Schools:

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

	Date	Initials
Radon Test Kits Deployed	12/28/15	JM
Radon Test Kits Sampled	12/31/15	M
Radon Test Kits Shipped to Lab*	12/31/15	JM
Radon Test Kits Received by Lab*	114/16	JM

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