

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

Site Name	Georgian Forest
	Elementary School
Date of Test Report	2/17/2023
Round of Testing	Initial
	Follow-up
	Post Remediation
	2 Year Testing
	5 Year Testing
	HVAC Upgrade
	Window Replacement
	New Addition
	New Facility
# Rooms Tested	67
# Rooms \geq 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	3.2 pCi/L

MCPS RADON TESTING – EXECUTIVE SUMMARY

Project Status:

1. 5-Year retesting completed.



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

February 17, 2023

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

Re:	Radon Testing Services		
	KCI Job # 122210551		
Location:	Georgian Forest Elementary School		
	3100 Regina Drive		
	Silver Spring, MD 20906		

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 Georgian Forest Elementary School, located at 3100 Regina Dr. Silver Spring, MD 20906 (subject site).

Scope of Services:

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

KCI visited the site on January 24, 2023 and deployed seventy-six (76) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

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

KCI returned to the site on January 27, 2023 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Accustar Labs - MA. for analysis by gamma-ray spectroscopy.

Mr. Brian Croyle February 17, 2023 Page 3

Accustar Labs - MA is a NRSB certified analytical laboratory for radon analysis (certification #ARL0017) located at 2 Saber Way, Ward Hill, MA 01835.

Evaluation of Testing Conditions:

These tests represent:

• Follow up to initial testing.

These tests were conducted to:

• Evaluate radon concentration levels at the facility.

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

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

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

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

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

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

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

Sincerely,

Tyler 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

KCI TECHNOLOGIES, INC.

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

Tab	le 1- Radon Testing Result Georgian Forest ES	S
Test Per	riod: 01/24/2023 - 01/27/	2023
Kit Number	Room / Area	Result
11633627	100	< 0.3
11633621	101	< 0.3
11633639	102	0.9
11633640	102	< 0.3
11633634	103	< 0.3
11633622	104	< 0.3
11633628	105	0.5
11633666	106	< 0.3
11633665	107	0.9
11633664	108	2.4
11633617	109	1.4
11633613	110	1.5
11633632	111	< 0.3
11633606	111	0.9
11633605	112	1.5
11633604	113	0.7
11633616	114	2.0
11633615	115	2.4
11633638	116	0.9
11633671	117	1.1
11633637	118	0.7
11633636	119	2.0
11633663	119	1.9
11633612	120	< 0.3
11633614	120	0.7
11633619	121	0.5
11633633	122	1.0
11633620	124	< 0.3
11633646	126	< 0.3
11633645	203	2.3
11633651	204	3.1
11633672	204	3.2
11633673	205	1.4
11633679	205	< 0.3
11633643	206	1.0
11633652	207	1.6
11633644	209	0.9
11633680	211	< 0.3
11633659	213	< 0.3
11633674	214	< 0.3
11633662	216	< 0.3
11633669	217	< 0.3

	Table 1- Radon Testing Results				
Georgian Forest ES					
Tes	Test Period: 01/24/2023 - 01/27/2023				
Kit Number	Room / Area	Result			
11633670	219	0.5			
11633675	220	0.6			
11633661	229	< 0.3			
11633618	109A	1.1			
11633603	AP	1.4			
11633629	APR	0.6			
11633649	APR	< 0.3			
11633650	BUILDING SERVICES	< 0.3			
11633609	CONFERENCE	1.2			
11633642	GYM	1.4			
11633648	GYM	1.8			
11633641	GYM OFFICE	1.5			
11633602	HEALTH	1.5			
11633607	HEALTH OFFICE	1.3			
11633630	KITCHEN OFFICE	1.1			
11633654	LINKAGES	< 0.3			
11633655	LINKAGES CARE MANAGER	1.1			
11633653	LINKAGES CONFERENCE	0.8			
11633658	LINKAGES SITE COORDINATOR	1.0			
11633657	LINKAGES THERAPIST	< 0.3			
11633601	MAIN OFFICE	1.2			
11633611	MEDIA	1.3			
11633623	MEDIA	1.6			
11633624	MEDIA	1.3			
11633625	MEDIA OFFICE	1.6			
11633626	MEDIA WORKROOM	1.8			
11633631	PARENT RESOURCE	0.8			
11633608	PRINCIPAL	1.1			
11633681	PSCH	< 0.3			
11633667	SDT	< 0.3			
11633668	SDT	< 0.3			
11633635	STAFF LOUNGE	< 0.3			
11633656	STAFF LOUNGE	< 0.3			
11633610	STAFF WORKROOM	1.1			

		gian Forest ES	
	Test Period:	01/24/23 - 01/27/23	
Kit Number	QC Type	Room / Area	Result
11633639	D	102	0.9
11633632	FB	111	< 0.3
11633636	D	119	2.0
11633614	D	120	0.7
11633672	D	204	3.2
11633679	FB	205	< 0.3
11633611	D	Media	1.3
11633667	D	SDT	< 0.3
11633635	FB	Staff Lounge	< 0.3
11633975	OB	OFFICE BLANK	< 0.3
11633983	ТВ	TRAVEL BLANK	< 0.3

	Summary of Missed Locations	
	Georgian Forest ES	
Т	est Period: 01/24/23 - 01/27/23	
Kit Number	Room/Area	Result
	N/A	

Summary o	of Missing, Compromised and >/= 4	piC/L Tests
	Georgian Forest ES	-
	Test Period: 01/24/23 - 01/27/23	
Kit Number	Room/Area	Result
	N/A	

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for: GEORGIAN FOREST ES MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11633627	100	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633621	101	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633640	102	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633639	102	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	0.9 ± 0.4	2023-01-31
11633634	103	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633622	104	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633628	105	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	0.5 ± 0.4	2023-01-31
11633666	106	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633665	107	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	0.9 ± 0.4	2023-01-31
11633664	108	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	2.4 ± 0.4	2023-01-31
11633617	109	2023-01-24 @ 10:00 am	2023-01-27 @ 9:00 am	1.4 ± 0.4	2023-01-31
11633618	109A	2023-01-24 @ 10:00 am	2023-01-27 @ 9:00 am	1.1 ± 0.4	2023-01-31
11633632	11	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633613	110	2023-01-24 @ 10:00 am	2023-01-27 @ 9:00 am	1.5 ± 0.4	2023-01-31
11633606	111	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	0.9 ± 0.4	2023-01-31
11633605	112	2023-01-24 @ 10:00 am	2023-01-27 @ 9:00 am	1.5 ± 0.4	2023-01-31
11633604	113	2023-01-24 @ 10:00 am	2023-01-27 @ 9:00 am	0.7 ± 0.4	2023-01-31
11633616	114	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	2.0 ± 0.4	2023-01-31
11633615	115	2023-01-24 @ 10:00 am	2023-01-27 @ 9:00 am	2.4 ± 0.4	2023-01-31
11633638	116	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	0.9 ± 0.4	2023-01-31
11633671	117	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	1.1 ± 0.4	2023-01-31
11633637	118	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	0.7 ± 0.4	2023-01-31
11633663	119	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	1.9 ± 0.4	2023-01-31
11633636	119	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	2.0 ± 0.4	2023-01-31
11633614	120	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	0.7 ± 0.4	2023-01-31
11633612	120	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633619	121	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	0.5 ± 0.4	2023-01-31
11633633	122	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	1.0 ± 0.4	2023-01-31
11633620	124	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633646	126	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633645	203	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	2.3 ± 0.4	2023-01-31
11633651	204	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	3.1 ± 0.4	2023-01-31
11633672	204	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	3.2 ± 0.4	2023-01-31
11633679	205	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633673	205	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	1.4 ± 0.4	2023-01-31
11633643	206	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	1.0 ± 0.4	2023-01-31
11633652	207	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	1.6 ± 0.4	2023-01-31

Radon test result report for: GEORGIAN FOREST ES MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11633644	209	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	0.9 ± 0.4	2023-01-31
11633680	211	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633659	213	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633674	214	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633662	216	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633669	217	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633670	219	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	0.5 ± 0.4	2023-01-31
11633675	220	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	0.6 ± 0.4	2023-01-31
11633661	229	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633603	AP	2023-01-24 @ 10:00 am	2023-01-27 @ 9:00 am	1.4 ± 0.4	2023-01-31
11633629	APR	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	0.6 ± 0.4	2023-01-31
11633649	APR	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633650	BUILDING SERVICES	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633609	CONFERENCE	2023-01-24 @ 10:00 am	2023-01-27 @ 9:00 am	1.2 ± 0.4	2023-01-31
11633642	GYM	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	1.4 ± 0.4	2023-01-31
11633648	GYM	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	1.8 ± 0.4	2023-01-31
11633641	GYM OFFICE	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	1.5 ± 0.4	2023-01-31
11633602	HEALTH	2023-01-24 @ 10:00 am	2023-01-27 @ 9:00 am	1.5 ± 0.4	2023-01-31
11633607	HEALTH OFFICE	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	1.3 ± 0.4	2023-01-31
11633630	KITCHEN OFFICE	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	1.1 ± 0.4	2023-01-31
11633654	LINKAGES	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633655	LINKAGES CARE MANAGER	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	1.1 ± 0.4	2023-01-31
11633653	LINKAGES CONFERENCE	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	0.8 ± 0.4	2023-01-31
11633658	LINKAGES SITE COORDINATOR	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	1.0 ± 0.4	2023-01-31
11633657	LINKAGES THERAPIST	2023-01-24 @ 11:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633601	MAIN OFFICE	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	1.2 ± 0.4	2023-01-31
11633624	MEDIA	2023-01-24 @ 10:00 am	2023-01-27 @ 9:00 am	1.3 ± 0.4	2023-01-31
11633611	MEDIA	2023-01-24 @ 10:00 am	2023-01-27 @ 9:00 am	1.3 ± 0.4	2023-01-31
11633623	MEDIA	2023-01-24 @ 10:00 am		1.6 ± 0.4	2023-01-31
11633625	MEDIA OFFICE	2023-01-24 @ 10:00 am		1.6 ± 0.4	2023-01-31
11633626	MEDIA WORKROOM	2023-01-24 @ 10:00 am	2023-01-27 @ 9:00 am	1.8 ± 0.4	2023-01-31
11633631	PARENT RESOURCE	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	0.8 ± 0.4	2023-01-31
11633608	PRINCIPAL	2023-01-24 @ 10:00 am		1.1 ± 0.4	2023-01-31
11633681	PSCH		2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633667	SDT		2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633668	SDT		2023-01-27 @ 10:00 am	< 0.3	2023-01-31
11633635	STAFF LOUNGE	2023-01-24 @ 10:00 am	2023-01-27 @ 10:00 am	< 0.3	2023-01-31

February 1, 2023

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for: GEORGIAN FOREST ES MAIN

Kit #	Room Id	Started		Ended		pCi/L	Analyzed
11633656	STAFF LOUNGE	2023-01-24 @	10:00 am	2023-01-27 @ 10:0	00 am	< 0.3	2023-01-31
11633610	STAFF WORKROOM	2023-01-24 @	10:00 am	2023-01-27 @ 9:00	0 am 1	$.1 \pm 0.4$	2023-01-31

CLIENT KCI TECHNOLOGIES	Job Number 208343
	_pCi/L Rel. Hum <u>49.4</u> % Temp. <u>69.6</u> F
Date Start: 12/24/22 Date Stop: 12/27/2	Date Start: Date Stop:
Time Start: <u>O810</u> Time Stop: <u>O810</u>	Time Start: Time Stop:
	Device No.'s:
	÷
THRU 11285103	1
Byceff	
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:

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

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

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December 29, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for: OFFICE MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11285110	SK1	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	31.7 ± 2.5	2022-12-29
11285101	SK2	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	30.1 ± 2.4	2022-12-29
11285103	SK3	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	34.0 ± 2.7	2022-12-29
11285102	SK4	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	30.9 ± 2.5	2022-12-29
11285109	SK5	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	32.0 ± 2.6	2022-12-29



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 – Week 2 January Schools

Name of Schools:

- 1. Springbrook HS
- 2. White Oak MS
- 3. Cloverly ES
- 4. Georgian Forest ES
- 5. Harmony Hills ES
- 6. Poolesville ES
- 7. Montrose Center
- 8. Kingsley Wilderness
- 9. Poolesville HS
- **10.Carl Sandburg Learning Center**

	Date	Initials
Radon Test Kits Deployed	01/24/2023	BMMY
Radon Test Kits Collected	01/27/2023	BMM
Radon Test Kits Shipped to Lab*	01/27/2023	BMM
Radon Test Kits Received by Lab*	01/31/2023	BMM

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



MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

Executive Summary: Georgian Forest Elementary School 3100 Regina Drive, Glenmont, MD 20906

Date of Test Report:	2/13/2019
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:	82
# of Rooms ≥ 4.0 pCi/L:	0
Low Value:	< 0.4
High Value:	2.1

Project Status Initial testing complete: No further action at this time



February 13, 2019

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

Re: Radon Testing Services

Location: Georgian Forest Elementary School 3100 Regina Drive, Glenmont, MD 20906

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 Georgian Forest Elementary School, located at 3100 Regina Drive, Glenmont, MD 20906 (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 November 27, 2018 and deployed ninety-eight (98) activated charcoal (AC) radon test kits. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on November 30, 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	None	NA
≤ 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-Ame Gewich

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 A

Floor Plan with Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

	Radon Testing Results						
	Georgian Forest Elementary School						
	Testing Period: 11/27/18 - 11/30/18						
Kit Number	Room / Area	Result (pCi/L)					
3919472	100	0.6					
3919473	101	0.4					
3919476	102	0.4					
3919475	103	0.4					
3919474	104	<0.4					
3919471	105	<0.4					
3919308	106	<0.4					
3919302	107	0.7					
3919301	108	1.0					
3919341	109	1.5					
3919306	109A	1.1					
3919466	110	1.3					
3919467	111	1.6					
3919468	112	1.1					
3919470	113	2.1					
3919343	114	0.6					
3919342	115	1.5					
3919344	116	<0.4					
3919345	117	0.4					
3919347	118	<0.4					
3919346	119	1.1					
3919465	120	1.9					
3919464	121	1.2					
3919463	122	1.3					
3919461	124	0.4					
3919462	126	0.6					
3919318	200	0.5					
3919485	201	<0.4					
3919482	202A	0.8					
3919486	202B	1.2					
3919541	203	1.5					
3919490	204	1.5					
3919319	205	1.1					
3919489	206	1.0					
3919488	207	1.0					
3919484	208	0.4					
3919483	209	0.8					
3919481	210	0.4					
3919543	211	1.2					
3919544	213	1.0					
3919550	214	1.0					
3919320	216	0.9					
3919502	217	0.7					

	Georgian Forest Elementary School	
	Testing Period: 11/27/18 - 11/30/18	
Kit Number	Room / Area	Result (pCi/L
3919503	219	1.1
3919504	220	1.3
3919449	222	0.7
3919505	223	0.6
3919507	225	0.8
3919549	229/231	0.7
3919545	232	1.1
3919542	234	1.5
3919508	AP Office	0.5
3888468	APR	0.7
3888469	APR	0.8
3919480	Book Room	0.4
3919314	Building Services	<0.4
3919535	Conference Room	0.4
3919536	Copy Room	0.7
3919509	ESOL	0.5
3919537	File Room	0.6
3919477	Gym	2.0
3888470	Gym	2.1
3919478	Gym Office	0.6
3919533	Health Office	0.8
3919532	Health Room	1.4
3919312	Kitchen	0.7
3919313	Kitchen Office	1.1
3919348	Linkages to Learning	0.4
3919349	Linkages to Learning Conference Room	0.5
3919315	Linkages to Learning Family Case Manager	<0.4
3919350	Linkages to Learning Site Coordinator	0.4
3919316	Linkages to Learning Therapist	<0.4
3919531	Main Office	0.7
3919305	Media Center	0.9
3919303	Media Center	1.2
3919307	Media Center Office	1.2
3919539	Media Work Room	1.5
3919510	Office 3	0.8
3919538	Parent Resource	0.5
3919534	Principal's Office	0.6
3919501	Staff Development	0.7
3919310	Staff Lounge	<0.4
3919311	Staff Lounge Telephone Room	<0.4
3919547	Support Room	1.3
3919546	Support Room ISA	0.8

	Radon Testing Results				
Georgian Forest Elementary School					
	Testing Period: 11/27/18 - 11/30/18				
Kit Number	QC Туре	Result (pCi/L)			
3919469	112 (D)	1.2			
3919487	202B (D)	1.0			
3919506	223 (D)	1.0			
3919548	231 (D)	0.9			
3919479	Gym Office (D)	1.2			
3919317	Linkages to Learning Therapist (D)	0.4			
3919304	Media Center (D)	0.7			
3919540	Media Work Room (D)	1.5			
3919309	Staff Lounge (D)	<0.4			
3919577	Field Blank	<0.4			
3918016	Field Blank	<0.4			
3919428	Office Blank	<0.4			
3919424	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



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 2930 Eskridge Road **Georgian Forest Elementary School** Silver Spring MD 20906 Fairfax VA 22031

Log Number	Device Number	Test Expo	osure Duration:	Area Tested	Result pCi/L
2400767	3919531 11/27/2018	9:45 am	11/30/2018 8:27 am	Georgian Forest Elementary Flr 1 Main Office	0.7
2400768	3919532 11/27/2018	9:46 am	11/30/2018 8:27 am	Georgian Forest Elementary Flr 1 Health Room	1.4
2400769	3919533 11/27/2018	9:48 am	11/30/2018 8:30 am	Georgian Forest Elementary Flr 1 Health Office	0.8
2400770	3919534 11/27/2018	9:50 am	11/30/2018 8:28 am	Georgian Forest Elementary Flr 1 Principal's Offic	0.6
2400771	3919535 11/27/2018	9:51 am	11/30/2018 8:28 am	Georgian Forest Elementary FIr 1 Conference Roo	0.4
2400772	3919536 11/27/2018	9:52 am	11/30/2018 8:29 am	Georgian Forest Elementary Flr 1 Copy Room	0.7
2400773	3919537 11/27/2018	9:54 am	11/30/2018 8:29 am	Georgian Forest Elementary FIr 1 File Room	0.6
2400774	3919538 11/27/2018	9:56 am	11/30/2018 8:31 am	Georgian Forest Elementary Flr 1 Parent Resource	0.5
2400775	3919539 11/27/2018	9:59 am	11/30/2018 8:32 am	Georgian Forest Elementary Flr 1 Media Work Roo	1.5
2400776	3919540 11/27/2018	9:59 am	11/30/2018 8:32 am	Georgian Forest Elementary Flr 1 Media Work Rm	1.5
2400777	3919471 11/27/2018	3 10:01 am	11/30/2018 8:33 am	Georgian Forest Elementary Flr 1 Rm 105	< 0.4

Comment: Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3919312 (Kitchen) and 3919313 (Kitchen Office). Your test is for informational purposes only. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/03/2018 Date Logged:

12/03/2018

Date Analyzed: 12/03/2018 Date Reported: 01/29/2019

Disclaimer:

Report Reviewed By: WIAA

Report Approved By: Shawn Price, Director of Laboratory Operations, AccuStar Labs

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

The uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon

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.



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 Survey2930 Eskridge RoadGeorgian Forest Elementary SchoolFairfax VA 22031Silver Spring MD 20906

Log Devi Number Num	Toet Evn	osure Duration:	Area Tested	Result pCi/L
2400778 39194	72 11/27/2018 10:03 am	11/30/2018 8:35 am	Georgian Forest Elementary Flr 1 Rm 100	0.6
2400779 39194	73 11/27/2018 10:05 am	11/30/2018 8:36 am	Georgian Forest Elementary Flr 1 Rm 101	0.4
2400780 39194	74 11/27/2018 10:06 am	11/30/2018 8:37 am	Georgian Forest Elementary Flr 1 Rm 104	< 0.4
2400781 39194	75 11/27/2018 10:07 am	11/30/2018 8:38 am	Georgian Forest Elementary Flr 1 Rm 103	0.4
2400782 39194	76 11/27/2018 10:08 am	11/30/2018 8:38 am	Georgian Forest Elementary Flr 1 Rm 102	0.4
2400783 39194	77 11/27/2018 10:10 am	11/30/2018 8:41 am	Georgian Forest Elementary Flr 1 Gym	2.0
2400784 39194	78 11/27/2018 10:13 am	11/30/2018 8:42 am	Georgian Forest Elementary Flr 1 Gym Office Dup	0.6
2400785 39194	79 11/27/2018 10:13 am	11/30/2018 8:42 am	Georgian Forest Elementary FIr 1 Gym Office	1.2
2400786 39194	80 11/27/2018 10:19 am	11/30/2018 8:44 am	Georgian Forest Elementary FIr 1 Book Room	0.4
2400787 39194	61 11/27/2018 10:21 am	11/30/2018 8:43 am	Georgian Forest Elementary Flr 1 Room 124	0.4
2400788 39194	62 11/27/2018 10:22 am	11/30/2018 8:43 am	Georgian Forest Elementary Flr 1 Room 126	0.6

Comment: Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3919312 (Kitchen) and 3919313 (Kitchen Office). Your test is for informational purposes only. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

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Date Analyzed: 12/03/2018 Date Reported: 01/29/2019

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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.



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 2930 Eskridge Road **Georgian Forest Elementary School** Silver Spring MD 20906 Fairfax VA 22031

Log Number	Device Number	Test Expos	sure Duration:	Area Tested	Result pCi/L
2400789	3919463 11/27/2018	3 10:24 am	11/30/2018 8:45 am	Georgian Forest Elementary FIr 1 Room 122	1.3
2400790	3919464 11/27/2018	3 10:26 am	11/30/2018 8:46 am	Georgian Forest Elementary FIr 1 Room 121	1.2
2400791	3919465 11/27/2018	3 10:27 am	11/30/2018 8:46 am	Georgian Forest Elementary FIr 1 Room 120	1.9
2400792	3919466 11/27/2018	3 10:29 am	11/30/2018 8:46 am	Georgian Forest Elementary FIr 1 Room 110	1.3
2400793	3919467 11/27/2018	3 10:31 am	11/30/2018 8:47 am	Georgian Forest Elementary Flr 1 Room 111	1.6
2400794	3919468 11/27/2018	3 10:33 am	11/30/2018 8:47 am	Georgian Forest Elementary FIr 1 Room 112	1.1
2400795	3919469 11/27/2018	3 10:33 am	11/30/2018 8:47 am	Georgian Forest Elementary Flr 1 Room 112 Dup	1.2
2400796	3919470 11/27/2018	3 10:35 am	11/30/2018 8:48 am	Georgian Forest Elementary FIr 1 Room 113	2.1
2400797	3919341 11/27/2018	3 10:40 am	11/30/2018 8:48 am	Georgian Forest Elementary FIr 1 Room 109	1.5
2400798	3919342 11/27/2018	3 10:40 am	11/30/2018 8:48 am	Georgian Forest Elementary FIr 1 Room 115	1.5
2400799	3919343 11/27/2018	3 10:40 am	11/30/2018 8:49 am	Georgian Forest Elementary FIr 1 Room 114	0.6

Comment: Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3919312 (Kitchen) and 3919313 (Kitchen Office). Your test is for informational purposes only. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

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

Date Analyzed: 12/03/2018 Date Reported: 01/29/2019

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written interpretation of the results.



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 Survey2930 Eskridge RoadGeorgian Forest Elementary SchoolFairfax VA 22031Silver Spring MD 20906

Log Number	Device Number	Test Exp	osure Duration:	Area Tested	Result pCi/L
2400800	3919344 11/27/20	18 10:42 am	11/30/2018 8:51 am	Georgian Forest Elementary FIr 1 Room 116	< 0.4
2400801	3919345 11/27/20	18 10:44 am	11/30/2018 8:52 am	Georgian Forest Elementary FIr 1 Room 117	0.4
2400802	3919346 11/27/20	18 10:45 am	11/30/2018 8:53 am	Georgian Forest Elementarary Flr 1 Room 119	1.1
2400803	3919347 11/27/20	18 10:47 am	11/30/2018 8:54 am	Georgian Forest Elementary Flr 1 Room 118	< 0.4
2400804	3919348 11/27/20	18 10:52 am	11/30/2018 8:32 am	Georgian Forest Elementary Flr 1 Linkages to Lear	0.4
2400805	3919349 11/27/20	18 10:53 am	11/30/2018 8:33 am	Georgian Forest Elementary FIr 1 Linkages to Lear	0.5
2400806	3919350 11/27/20	18 10:59 am	11/30/2018 8:34 am	Georgian Forest Elementary FIr 1 Linkages to Lear	0.4
2400807	3919301 11/27/20	18 10:59 am	11/30/2018 8:56 am	Georgian Forest Elementary School Flr 1 Rm 108	1.0
2400808	3919302 11/27/20	18 11:02 am	11/30/2018 8:56 am	Georgian Forest Elementary Flr 1 Room 107	0.7
2400809	3919303 11/27/20	18 11:02 am	11/30/2018 8:57 am	Georgian Forest Elementary Flr 1 Media Center	1.2
2400810	3919304 11/27/20	18 11:02 am	11/30/2018 8:57 am	Georgian Forest Elementary Flr 1 Media Center D	0.7

Comment: Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3919312 (Kitchen) and 3919313 (Kitchen Office). Your test is for informational purposes only. A copy of this report was emailed to Intertek-PSI (VA).

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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 Survey2930 Eskridge RoadGeorgian Forest Elementary SchoolFairfax VA 22031Silver Spring MD 20906

Log Number	Device Number	Test Exp	osure Duration:	Area Tested	Result pCi/L
2400811	3919305 11/27/2)18 11:05 am	11/30/2018 8:58 am	Georgian Forest Elementary Flr 1 Media Center	0.9
2400812	3919306 11/27/2)18 11:08 am	11/30/2018 8:47 am	Georgian Forest Elementary Flr 1 Room 109A	1.1
2400813	3919307 11/27/2)18 11:10 am	11/30/2018 8:58 am	Georgian Forest Elementary FIr 1 Media Center Off	1.2
2400814	3919308 11/27/2)18 11:12 am	11/30/2018 8:59 am	Georgian Forest Elementary Flr 1 Room 106	< 0.4
2400815	3919309 11/27/2)18 11:12 am	11/30/2018 8:59 am	Georgian Forest Elementary Flr 1 Staff Lounge Du	< 0.4
2400816	3919310 11/27/2)18 11:15 am	11/30/2018 8:59 am	Georgian Forest Elementary Flr 1 Staff Lounge	< 0.4
2400817	3919311 11/27/2)18 11:17 am	11/30/2018 9:00 am	Georgian Forest Elementary FIr 1 Staff Lounge Tel	< 0.4
2400818	3919312 11/27/2)18 11:23 am	11/30/2018 9:01 am	Georgian Forest Elementary Flr 1 Kitchen	0.7
2400819	3919313 11/27/2)18 11:27 am	11/30/2018 9:02 am	Georgian Forest Elementary Flr 1 Kitchen Office	1.1
2400820	3919314 11/27/2)18 11:29 am	11/30/2018 9:02 am	Georgian Forest Elementary FIr 1 Building Service	< 0.4
2400821	3919315 11/27/2)18 11:29 am	11/30/2018 9:03 am	Georgian Forest Elementary Flr 1 Linkages to Lear	< 0.4

Comment: Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3919312 (Kitchen) and 3919313 (Kitchen Office). Your test is for informational purposes only. A copy of this report was emailed to Intertek-PSI (VA).

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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 Survey2930 Eskridge RoadGeorgian Forest Elementary SchoolFairfax VA 22031Silver Spring MD 20906

Log Number	Device Number	Test Expo	osure Duration:	Area Tested	Result pCi/L
2400822	3919316 11/27/2018	3 11:29 am	11/30/2018 8:35 am	Georgian Forest Elementary Flr 1 Linkages to Lear	< 0.4
2400823	3919317 11/27/2018	3 11:29 am	11/30/2018 8:36 am	Georgian Forest Elementary FIr 1 Linkages to Lear	0.4
2400824	3919318 11/27/2018	3 11:34 am	11/30/2018 9:05 am	Georgian Forest Elementary Flr 2 Room 200	0.5
2400825	3919319 11/27/2018	3 11:36 am	11/30/2018 9:09 am	Georgian Forest Elementary Flr 2 Room 205	1.1
2400826	3919320 11/27/2018	3 11:38 am	11/30/2018 9:07 am	Georgian Forest Elementary Flr 2 Room 216	0.9
2400827	3919449 11/27/2018	3 11:40 am	11/30/2018 9:19 am	Georgian Forest Elementary FIr 2 Room 222	0.7
2400828	3919481 11/27/2018	3 5:48 pm	11/30/2018 9:06 am	Georgian Forest Elementary Flr 2 Room 210	0.4
2400829	3919482 11/27/2018	3 5:51 pm	11/30/2018 9:07 am	Georgian Forest Elementary Flr 2 Room 202A	0.8
2400830	3919483 11/27/2018	3 5:52 pm	11/30/2018 9:08 am	Georgian Forest Elementary Flr 2 Room 209	0.8
2400831	3919484 11/27/2018	3 5:53 pm	11/30/2018 9:08 am	Georgian Forest Elementary Flr 2 Room 208	0.4
2400832	3919485 11/27/2018	3 5:55 pm	11/30/2018 9:08 am	Georgian Forest Elementary Flr 2 Room 201	< 0.4

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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 2930 Eskridge Road **Georgian Forest Elementary School** Silver Spring MD 20906 Fairfax VA 22031

Log Number	Device Number	Test Exposure Durati	on:	Area Tested	Result pCi/L
2400833	3919486 11/27/201	8 5:56 pm 11/30/2018	9:08 am	Georgian Forest Elementary Flr 2 Room 202B	1.2
2400834	3919487 11/27/201	8 5:56 pm 11/30/2018	9:08 am	Georgian Forest Elementary Flr 2 Room 202B Du	1.0
2400835	3919488 11/27/201	8 5:57 pm 11/30/2018	9:09 am	Georgian Forest Elementary Flr 2 Room 207	1.0
2400836	3919489 11/27/201	8 5:58 pm 11/30/2018	9:09 am	Georgian Forest Elementary Flr 2 Room 206	1.0
2400837	3919490 11/27/201	8 6:02 pm 11/30/2018	9:10 am	Georgian Forest Elementary Flr 2 Room 204	1.5
2400838	3919541 11/27/201	8 6:03 pm 11/30/2018	9:08 am	Georgian Forest Elementary FIr 2 Room 203	1.5
2400839	3919542 11/27/201	8 6:04 pm 11/30/2018	9:11 am	Georgian Forest Elementary Flr 2 Room 234	1.5
2400840	3919543 11/27/201	8 6:06 pm 11/30/2018	9:12 am	Georgian Forest Elementary Flr 2 Room 211	1.2
2400841	3919544 11/27/201	8 6:07 pm 11/30/2018	9:13 am	Georgian Forest Elementary Flr 2 Room 213	1.0
2400842	3919545 11/27/201	8 6:08 pm 11/30/2018	9:14 am	Georgian Forest Elementary Flr 2 Room 232	1.1
2400843	3919546 11/27/201	8 6:09 pm 11/30/2018	9:10 am	Georgian Forest Elementary FIr 2 Support Room I	0.8

Comment: Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3919312 (Kitchen) and 3919313 (Kitchen Office). Your test is for informational purposes only. A copy of this report was emailed to Intertek-PSI (VA).

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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.



NELAC NY 11769 NRPP 103216 AL NRSB ARL0017

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 2930 Eskridge Road **Georgian Forest Elementary School** Silver Spring MD 20906 Fairfax VA 22031

Log Number	Device Number	Test Expo	sure Duration:	Area Tested	Result pCi/L
2400844	3919547 11/27/2018	8 6:10 pm	11/30/2018 9:10 am	Georgian Forest Elementary Flr 2 Support Room	1.3
2400845	3919548 11/27/2018	3 6:14 pm	11/30/2018 9:15 am	Georgian Forest Elementary Flr 2 Room 231 Dup	0.9
2400846	3919549 11/27/2018	3 6:14 pm	11/30/2018 9:15 am	Georgian Forest Elementary Flr 2 Room 231	0.7
2400847	3919550 11/27/2018	8 6:15 pm	11/30/2018 9:16 am	Georgian Forest Elementary FIr 2 Room 214	1.0
2400848	3919501 11/27/2018	8 6:21 pm	11/30/2018 9:17 am	Georgian Forest Elementary Flr 2 Staff Dev	0.7
2400849	3919502 11/27/2018	8 6:22 pm	11/30/2018 9:18 am	Georgian Forest Elementary Flr 2 Room 217	0.7
2400850	3919503 11/27/2018	8 6:22 pm	11/30/2018 9:18 am	Georgian Forest Elementary Flr 2 Room 219	1.1
2400851	3919504 11/27/2018	8 6:23 pm	11/30/2018 9:19 am	Georgian Forest Elementary FIr 2 Room 220	1.3
2400852	3919505 11/27/2018	8 6:25 pm	11/30/2018 9:19 am	Georgian Forest Elementary FIr 2 Room 223	0.6
2400853	3919506 11/27/2018	3 6:25 pm	11/30/2018 9:20 am	Georgian Forest Elementary Flr 2 Room 223 Dup	1.0
2400854	3919507 11/27/2018	8 6:27 pm	11/30/2018 9:19 am	Georgian Forest Elementary Flr 2 Room 225	0.8

Comment: Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3919312 (Kitchen) and 3919313 (Kitchen Office). Your test is for informational purposes only. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/03/2018 Date Logged:

12/03/2018

Date Analyzed: 12/03/2018 Date Reported: 01/29/2019

Disclaimer:

Report Reviewed By: _____ WIAA

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.

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



NELAC NY 11769 NRPP 103216 AL NRSB ARL0017

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

Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)	MCPS Radon Survey
2930 Eskridge Road	Georgian Forest Elementary School
Fairfax VA 22031	Silver Spring MD 20906

Log Number	Device Number	Test Expo	osure Duration:	Area Tested	Result pCi/L
2400855	3919508 11/27	/2018 6:28 pm	11/30/2018 9:19	am Georgian Forest Elementary Flr 2 C	ffice 1 0.5
2400856	3919509 11/27	/2018 6:29 pm	11/30/2018 9:20	am Georgian Forest Elementary Flr 2 C	ffice 2 0.5
2400857	3919510 11/27	/2018 6:30 pm	11/30/2018 9:21	am Georgian Forest Elementary Flr 2 C	ffice 3 0.8
2400858	3919577 11/27	/2018 9:45 am	11/30/2018 9:21	am Georgian Forest Elementary Flr x F	2m x < 0.4
2400859	3918016 11/27	/2018 9:45 am	11/30/2018 9:21	am Georgian Forest Elementary Flr x R	m x < 0.4
2400860	3919428 11/27	/2018 6:00 am	11/30/2018 9:21	am Georgian Forest Elementary School	Flr x Rm x < 0.4
2401261	3919424 11/27	/2018 6:00 am	11/30/2018 12:0	0 am Georgian Forest Elementary School	< 0.4

Comment: Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3919312 (Kitchen) and 3919313 (Kitchen Office). Your test is for informational purposes only. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/03/2018 Date Logged: 12/03/2018

Date Analyzed: 12/03/2018 Date Reported: 01/29/2019

Disclaimer:

Report Reviewed By: WIAA

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.

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Radon in Air

NELAC NY 11769 NRPP 103216 AL NRSB ARL0017

Laboratory Report for:

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

Property Tested: Project # 04481387-1

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

MCPS Radon Survey **Georgian Forest Elementary School** MD 02906

Log Device Number Number	Test Expo	osure Duration:	Area Tested	Result pCi/L
2401262 3888470	11/27/2018 10:10 am	11/30/2018 8:40 am	Bldg Georgian Forest Elementary School Flr 1 R	2.1
2401263 3888469	11/27/2018 11:17 am	11/30/2018 9:00 am	Bldg Georgian Forest Elementary School Flr 1 R	0.8
2401264 3888468	11/27/2018 11:23 am	11/30/2018 9:01 am	Bldg Georgian Forest Elementary School Flr 1 R	0.7

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

Distributed by: Intertek-PSI (VA)

Date Received: 12/03/2018 Date Logged:

12/03/2018

Date Analyzed: 12/04/2018 Date Reported: 12/04/2018

Disclaimer:

Report Reviewed By: ______ WIAA

Report Approved By: Shawn Price, Director of Laboratory Operations, AccuStar Labs

written interpretation of the results.

2 Saber Way Ward Hill MA 01835 888-480-8812

The uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon

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

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:	the 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

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT 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. Ashburton ES
- 2. Carderock Springs ES
- 3. Diamond ES
- 4. Fox Chapel ES
- 5. Baker MS
- 6. Damascus ES
- 7. Clemente MS
- 8. Clopper Mill ES

- 9. Broad Acres ES
- 10. Greencastle ES
- 11. Harmony Hills ES
- 12. Silver Spring International MS
- 13. Gaithersburg MS
- 14. Garrett Park ES
- 15. New Hampshire Estates ES
- 16. Georgian Forest ES

	Date	Initials
Radon Test Kits Deployed	11/27/2018	NL
Radon Test Kits Sampled	11/30/2018	NL
Radon Test Kits Shipped to Lab*	11/30/2018	NL
	12/01/2018;	
Radon Test Kits Received by Lab*	12/02/2018;	NL
	12/03/2018	

*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 GEORGIAN FOREST ELEMENTARY SCHOOL

3100 Regina Drive, Silver Spring, Maryland 20906

EXECUTIVE SUMMARY

Date of Test Report:	3/4/16 Follow-Up
Round of Testing:	Initial
	Follow-up
	Post Remediation
# Rooms Tested	3
# Rooms <u>≥</u> 4.0 pCi/L:	0
Low Value:	1.2
High Value:	3.0
Confirmed Rooms ≥ 4.0 pCi/L US EPA	0
Action Level	

Summary of Sampling Events ≥ 4.0 pCi/L

Room	Result (pCi/L) 3/11/16 (Rev 1 Initial)	Result (pCi/L) 3/4/16 Follow-Up	Average Result (pCi/L)
Room 234	4.1	2.7	3.4
GYM	2.9 (tampered)	1.8	2.4
GYM	2.2	1.2	1.7
Room 111	3.8	3.0	3.4



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

MCPS RADON TESTING

Executive Summary: Georgian Forest Elementary School

Date of Test Report:	3/4/2016
Round of Testing:	Initial
(Follow-up
	Post Remediation
# Rooms Tested:	3
# Rooms \geq 4.0 pCi/L:	0
Low Value:	1.2
High Value:	3.0

Project Status:

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



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

March 4, 2016

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

Re:	Radon Testing Services
	KCI Job # 12146341.28
Location:	Georgian Forest Elementary School
	3100 Regina Drive
	Silver Spring, MD 20906

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 Georgian Forest Elementary School, located at 3100 Regina Drive in Silver Spring, Maryland 20906 (subject site).

Scope of Services:

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

KCI visited the site on February 8, 2016 and deployed six (6) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on February 11, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936

Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

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

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

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

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

Results:

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
≥4.0 piC/L	none	n/a
<4.0 piC/L	See Attachn	nent 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 March 4, 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 8 testing. Office blanks were not submitted under each school individually.

	Radon Testing Results	
Geor	gian Forest Elementary School	
Те	est Period: 02/08/16-02/11/16	
Kit Number	Room / Area	Result
7730185	111	3.0
7730188	234	2.7
7730184	GYM	1.8
7730183	GYM	1.2

	Radon Testing Results	
Georgian Forest Elementary School		
Test Period: 02/08/16-02/11/16		
Kit Number	QC Type	Result
7730186	D (111)	2.3
7730187	FB (111)	< 0.3

ATTACHMENT C

Laboratory Analytical Results

February LABORATORY ANALYSIS 25, REPORT **

Radon test result report for: GEORGIAN FOREST ELEMENTARY SCHOOL MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7730185	111	2016-02-08 @ 1:00	pm 2016-02-11 @ 12:00 pm	3.0 ± 0.4	2016-02-15
7730186	111	2016-02-08 @ 1:00	pm 2016-02-11 @ 12:00 pm	2.3 ± 0.4	2016-02-15
7730187	111	2016-02-08 @ 1:00	pm 2016-02-11 @ 12:00 pm	< 0.3	2016-02-15
7730188	234	2016-02-08 @ 1:00	pm 2016-02-11 @ 12:00 pm	2.7 ± 0.4	2016-02-15
7730183	GYM	2016-02-08 @ 1:00	pm 2016-02-11 @ 12:00 pm	1.2 ± 0.3	2016-02-15
7730184	GYM	2016-02-08 @ 1:00	pm 2016-02-11 @ 12:00 pm	1.8 ± 0.4	2016-02-15

Radon test result report for: MCPS RADON PHASE 8 OFFICE BLANKS

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7729754	0	2016-02-08 @ 4:00 pm	2016-02-11 @ 5:00 pm	< 0.3	2016-02-15
7729757	0	2016-02-08 @ 4:00 pm	2016-02-11 @ 5:00 pm	< 0.3	2016-02-15
7729758	0	2016-02-08 @ 4:00 pm	2016-02-11 @ 5:00 pm	< 0.3	2016-02-15

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 ± 0.6	2016-02-04
,	7718281	102B	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.4 ± 0.6	2016-02-04
,	7718282	103C	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.3 ± 0.6	2016-02-04
,	7718288	104D	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.7 ± 0.6	2016-02-04
,	7718289	105E	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.6 ± 0.6	2016-02-04
,	7718291	106F	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.5 ± 0.6	2016-02-04
	//102/1	1001	2010 01 50 @ 9.00 ull	2010 02 01 @ 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 8

Name of Schools:

1.	Blair G. Ewing Center	12. Jackson Road ES
2.	Cedar Grove ES	13. Jones Lane ES
3.	Clarksburg ES	14. Lake Seneca ES
4.	Cloverly ES	15. Laytonsville ES
5.	Cold Spring ES	16. Montgomery Knolls ES
6.	Damascus ES	17. North Chevy Chase ES
7.	Dufief ES	18. Oakview ES
8.	East Silver Spring	19. Randolph Maint
9.	Georgian Forest ES	20. Robert Frost MS
10.	Germantown ES	21. Shady Grove Maint
11.	Glenallen ES	22. Viers Mill ES

	Date	Initials
Radon Test Kits Deployed	2/8/16	JM
Radon Test Kits Collected	2/11/16	ÛM
Radon Test Kits Shipped to Lab*	12/11/16	M
Radon Test Kits Received by Lab*	12/15/16	ŇМ

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



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MCPS RADON TESTING

Executive Summary: Georgian Forest Elementary School

Date of Test Report:	3/11/2016 (Rev 1)
Round of Testing:	Initial
	Follow-up
	Post Remediation
# Rooms Tested:	64
# Rooms \geq 4.0 pCi/L:	1
Low Value:	< 0.3
High Value:	4.1

Rooms with results \geq 4.0 pCi/L: Room 234 (4.1 pCi/L)

 $\label{eq:project Status:} Initial testing completed; re-test needed for results \geq 4.0 \ pCi/L.$ Initial testing completed; missing or compromised samples need re-test.



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March 11, 2016 (Rev 1)

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

Re:	Radon Testing Services		
	KCI Job # 12146341.22		
Location:	Georgian Forest Elementary School		
	3100 Regina Drive		
	Silver Spring, MD 20906		

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 Georgian Forest Elementary School, located at 3100 Regina Drive in Silver Spring, Maryland 20906 (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 eighty (80) 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	
≥4.0 piC/L	234 4.1		
<4.0 piC/L	See Attachment B		

Notes: D- Duplicate sample

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

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

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

Mr. Richard Cox March 11, 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

Radon Testing Results				
т	Georgian Forest ES Test Period: 12/28/15-12/31/15			
Kit Number	Room / Area	Result		
7708586	100	0.8		
7708595	101	0.7		
	7708567 102			
7708573	103	< 0.3		
7708577	104	< 0.3		
7708590	105	< 0.3		
7708558	106	< 0.3		
7708560	107	0.6		
7708598	108	1.6		
7708585	109	2.6		
7708580	110	2.9		
7708576	111	3.8		
7708542	112	2.2		
7708584	113	2.1		
7708592	114	1.6		
7708587	115	3.0		
7708568	116	< 0.3		
7708564	117	1.0		
7708565	118	< 0.3		
7708561	119	2.1		
7708575	120	1.3		
7708538	121	1.9		
7708571	122	2.0		
7708539	122	1.3		
7708570	124	1.0		
7708546	201	1.3		
7708544	203	1.7		
7708550	203	1.7		
		1.0		
7708549	205	1.2		
7708548	206			
7708540	207	1.2		
7708543	208	0.9		
7708545	210	1.1		
7708519	211	1.4		
7708501	213	1.2		
7708517	214	1.3		
7708502	216	1.3		
7708521	217	1.3		
7708503	219	1.0		
7708504	220	1.6		
7708508	222	1.1		
7708522	223	1.3		
7708523	229	2.0		
7708535	234	4.1		
7708581	109A	2.7		
7708554	ALL PURP	0.9		

	Radon Testing Results				
Georgian Forest ES Test Period: 12/28/15-12/31/15					
	Test Period: 12/28/15-12/31/15				
Kit Number	Result				
7708555	ALL PURP	0.9			
7708596	AP OFFICE	1.2			
7708537	BOOK	0.9			
7708556	BUILDING SERVICE	< 0.3			
7708559	CHILD	< 0.3			
7708589	CONF 1	0.8			
7708563	CONF 2	0.8			
7708574	GYM	2.4			
7708579	GYM	2.2			
7708582	* GYM (tampered)	2.9			
7708578	GYM OFFICE	1.3			
7708588	HEALTH	1.9			
7708562	LTL	0.6			
7708551	MEDIA	2.1			
7708599	MEDIA	2.0			
7708552	MEDIA OFF 1	1.8			
7708553	MEDIA OFF 2	2.0			
7708600	OFFICE	1.5			
7708593	PRINCIPAL	0.9			
7708524	STAFF DEVLP	1.5			
7708536	STAFF LOUNGE	< 0.3			
7708594	STAFF WORK	0.8			

Georgian Forest ES				
	Test Period: 12/28/15-12/31/15			
Kit Number	QC Type	Result		
7708597	D (104)	< 0.3		
7708591	D (115)	2.8		
7708541	D (116)	0.9		
7708566	D (118)	0.7		
7708572	D (121)	2.2		
7708516	D (214)	1.5		
7708529	D (STAFF DEVLP)	1.4		
7708583	D (STAFF LOUNGE)	< 0.3		
7708569	FB (104)	< 0.3		
7708520	FB (214)	< 0.3		
7708557	FB (STAFF LOUNGE)			
7706571	OB (0)			

ATTACHMENT C

Laboratory Analytical Results

Januates LABORATORY ANALYSIS 16, REPORT **

Radon test result report for: GEORGIAN FOREST ES MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7706571	0	2015-12-28 @ 5:00 pm	2015-12-31 @ 12:00 pm	< 0.3	2016-01-04
7708586	100	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	0.8 ± 0.3	2016-01-04
7708595	101	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	0.7 ± 0.3	2016-01-04
7708567	102	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	0.6 ± 0.3	2016-01-04
7708573	103	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-04
7708597	104	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-04
7708569	104	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-04
7708577	104	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-04
7708590	105	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-04
7708558	106	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7708560	107	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	0.6 ± 0.3	2016-01-04
7708598	108	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	1.6 ± 0.4	2016-01-04
7708585	109	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	2.6 ± 0.4	2016-01-04
7708581	109A	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	2.7 ± 0.4	2016-01-04
7708580	110	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	2.9 ± 0.4	2016-01-04
7708545	210	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	1.1 ± 0.3	2016-01-04
7708576	111	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	3.8 ± 0.5	2016-01-04
7708542	112	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	2.2 ± 0.4	2016-01-04
7708584	113	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	2.1 ± 0.4	2016-01-04
7708592	114	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	1.6 ± 0.4	2016-01-04
7708591	115	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	2.8 ± 0.4	2016-01-04
7708587	115	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	3.0 ± 0.4	2016-01-04
7708568	116	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7708541	116	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	0.9 ± 0.3	2016-01-04
7708564	117	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	1.0 ± 0.3	2016-01-04
7708565	118	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7708566	118	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	0.7 ± 0.3	2016-01-04
7708561	119	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	2.1 ± 0.4	2016-01-04
7708575	120	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	1.3 ± 0.3	2016-01-04
7708572	121	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	2.2 ± 0.4	2016-01-04
7708538	121	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	1.9 ± 0.4	2016-01-04
7708571	122	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	2.0 ± 0.4	2016-01-04
7708539	124	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	1.3 ± 0.3	2016-01-04
7708570	126	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	1.0 ± 0.3	2016-01-04
7708546	201	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.3 ± 0.3	2016-01-04
7708544	203	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.7 ± 0.4	2016-01-04
7708550	204	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.0 ± 0.3	2016-01-04

January LABORATORY ANALYSIS 16, REPORT **

Radon test result report for: GEORGIAN FOREST ES MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7708549	205	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.2 ± 0.3	2016-01-04
7708548	206	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.3 ± 0.4	2016-01-04
7708540	207	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.2 ± 0.3	2016-01-04
7708543	208	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	0.9 ± 0.3	2016-01-04
7708519	211	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.4 ± 0.4	2016-01-04
7708501	213	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.2 ± 0.3	2016-01-04
7708516	214	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.5 ± 0.3	2016-01-04
7708517	214	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.3 ± 0.3	2016-01-04
7708520	214	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7708502	216	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.3 ± 0.3	2016-01-04
7708521	217	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.3 ± 0.4	2016-01-04
7708503	219	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.0 ± 0.3	2016-01-04
7708504	220	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.6 ± 0.4	2016-01-04
7708508	222	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.1 ± 0.3	2016-01-04
7708522	223	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.3 ± 0.3	2016-01-04
7708523	229	2015-12-28 @ 1:00 pm	2015-12-31 @ 9:00 am	2.0 ± 0.4	2016-01-04
7708535	234	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	4.1 ± 0.5	2016-01-04
7708554	ALL PURP	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	0.9 ± 0.3	2016-01-04
7708555	ALL PURP	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	0.9 ± 0.3	2016-01-04
7708596	AP OFFICE	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	1.2 ± 0.3	2016-01-04
7708537	BOOK	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	0.9 ± 0.3	2016-01-04
		2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7708559	CHILD	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7708589	CONF 1	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	0.8 ± 0.3	2016-01-04
7708563	CONF 2	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	0.8 ± 0.3	2016-01-04
7708524	STAFF DEVLP	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.5 ± 0.3	2016-01-04
7708529	STAFF DEVLP	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.4 ± 0.3	2016-01-04
7708574	GYM	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	2.4 ± 0.4	2016-01-04
7708579	GYM	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	2.2 ± 0.4	2016-01-04
7708582	GYM	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	2.9 ± 0.4	2016-01-04
7708578	GYM OFFICE	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	1.3 ± 0.3	2016-01-04
7708588	HEALTH	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	1.9 ± 0.4	2016-01-04
7708562	LTL	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	0.6 ± 0.3	2016-01-04
7708551	MEDIA	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	2.1 ± 0.4	2016-01-04
7708552	MEDIA OFF 1	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	1.8 ± 0.4	2016-01-04
7708553	MEDIA OFF 2	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	2.0 ± 0.4	2016-01-04
7708599	MEDIA	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	2.0 ± 0.4	2016-01-04

Janua A LABORATORY ANALYSIS 16, REPORT **

Radon test result report for: GEORGIAN FOREST ES MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7708600	OFFICE	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	1.5 ± 0.3	2016-01-04
7708593	PRINCIPAL	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	0.9 ± 0.3	2016-01-04
7708557	STAFF LOUNGE	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7708536	STAFF LOUNGE	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7708583	STAFF LOUNGE	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-04
7708594	STAFF WORK	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	0.8 ± 0.3	2016-01-04

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

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	TRANSIT 20	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708180	TRANSIT 21	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708183	TRANSIT 22	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708178	TRANSIT 23	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708179	TRANSIT 24	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708177	TRANSIT 25	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708176	TRANSIT 26	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708174	TRANSIT 27	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708173	TRANSIT 28	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708175	TRANSIT 29	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708198	TRANSIT 3	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708172	TRANSIT 30	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708194	TRANSIT 5	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708196	TRANSIT 6	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708193	TRANSIT 7	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708192	TRANSIT 8	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708195	TRANSIT 9	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23

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

Decembe	LABORATORY ANALYSIS
23,	DEDODT **
2015	REPORT **

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: 1218115 Date Stop: $12211(5)$	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:
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



February 13, 2019

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

Re: Radon Testing Services

Location: Georgian Forest Elementary School 3100 Regina Drive, Glenmont, MD 20906

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 Georgian Forest Elementary School, located at 3100 Regina Drive, Glenmont, MD 20906 (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 November 27, 2018 and deployed ninety-eight (98) activated charcoal (AC) radon test kits. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on November 30, 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	None	NA
≤ 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-Ame Gewich

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					
Georgian Forest Elementary School						
	Testing Period: 11/27/18 - 11/30/18					
Kit Number	Room / Area	Result (pCi/L)				
3919472	100	0.6				
3919473	101	0.4				
3919476	102	0.4				
3919475	103	0.4				
3919474	104	<0.4				
3919471	105	<0.4				
3919308	106	<0.4				
3919302	107	0.7				
3919301	108	1.0				
3919341	109	1.5				
3919306	109A	1.1				
3919466	110	1.3				
3919467	111	1.6				
3919468	112	1.1				
3919470	113	2.1				
3919343	114	0.6				
3919342	115	1.5				
3919344	116	<0.4				
3919345	117	0.4				
3919347	118	<0.4				
3919346	119	1.1				
3919465	120	1.9				
3919464	121	1.2				
3919463	122	1.3				
3919461	124	0.4				
3919462	126	0.6				
3919318	200	0.5				
3919485	201	<0.4				
3919482	202A	0.8				
3919486	202B	1.2				
3919541	203	1.5				
3919490	204	1.5				
3919319	205	1.1				
3919489	206	1.0				
3919488	207	1.0				
3919484	208	0.4				
3919483	209	0.8				
3919481	210	0.4				
3919543	211	1.2				
3919544	213	1.0				
3919550	214	1.0				
3919320	216	0.9				
3919502	217	0.7				

	Georgian Forest Elementary School		
Testing Period: 11/27/18 - 11/30/18			
Kit Number	Room / Area	Result (pCi/L	
3919503	219	1.1	
3919504	220	1.3	
3919449	222	0.7	
3919505	223	0.6	
3919507	225	0.8	
3919549	229/231	0.7	
3919545	232	1.1	
3919542	234	1.5	
3919508	AP Office	0.5	
3888468	APR	0.7	
3888469	APR	0.8	
3919480	Book Room	0.4	
3919314	Building Services	<0.4	
3919535	Conference Room	0.4	
3919536	Copy Room	0.7	
3919509	ESOL	0.5	
3919537	File Room	0.6	
3919477	Gym	2.0	
3888470	Gym	2.1	
3919478	Gym Office	0.6	
3919533	Health Office	0.8	
3919532	Health Room	1.4	
3919312	Kitchen	0.7	
3919313	Kitchen Office	1.1	
3919348	Linkages to Learning	0.4	
3919349	Linkages to Learning Conference Room	0.5	
3919315	Linkages to Learning Family Case Manager	<0.4	
3919350	Linkages to Learning Site Coordinator	0.4	
3919316	Linkages to Learning Therapist	<0.4	
3919531	Main Office	0.7	
3919305	Media Center	0.9	
3919303	Media Center	1.2	
3919307	Media Center Office	1.2	
3919539	Media Work Room	1.5	
3919510	Office 3	0.8	
3919538	Parent Resource	0.5	
3919534	Principal's Office	0.6	
3919501	Staff Development	0.7	
3919310	Staff Lounge	<0.4	
3919311	Staff Lounge Telephone Room	<0.4	
3919547	Support Room	1.3	
3919546	Support Room ISA	0.8	

	Radon Testing Results				
	Georgian Forest Elementary School				
	Testing Period: 11/27/18 - 11/30/18				
Kit Number	QC Туре	Result (pCi/L)			
3919469	112 (D)	1.2			
3919487	202B (D)	1.0			
3919506	223 (D)	1.0			
3919548	231 (D)	0.9			
3919479	Gym Office (D)	1.2			
3919317	Linkages to Learning Therapist (D)	0.4			
3919304	Media Center (D)	0.7			
3919540	Media Work Room (D)	1.5			
3919309	Staff Lounge (D)	<0.4			
3919577	Field Blank	<0.4			
3918016	Field Blank	<0.4			
3919428	Office Blank	<0.4			
3919424	Transit Blank	<0.4			

	Radon Testing Results				
	Georgian Forest Elementary School				
	Testing Period: 11/27/18 - 11/30/18				
Kit Number	QC Туре	Result (pCi/L)			
3919469	112 (D)	1.2			
3919487	202B (D)	1.0			
3919506	223 (D)	1.0			
3919548	231 (D)	0.9			
3919479	Gym Office (D)	1.2			
3919317	Linkages to Learning Therapist (D)	0.4			
3919304	Media Center (D)	0.7			
3919540	Media Work Room (D)	1.5			
3919309	Staff Lounge (D)	<0.4			
3919577	Field Blank	<0.4			
3918016	Field Blank	<0.4			
3919428	Office Blank	<0.4			
3919424	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



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 2930 Eskridge Road **Georgian Forest Elementary School** Silver Spring MD 20906 Fairfax VA 22031

Log Number	Device Number	Test Expo	osure Duration:	Area Tested	Result pCi/L
2400767	3919531 11/27/2018	9:45 am	11/30/2018 8:27 am	Georgian Forest Elementary Flr 1 Main Office	0.7
2400768	3919532 11/27/2018	9:46 am	11/30/2018 8:27 am	Georgian Forest Elementary Flr 1 Health Room	1.4
2400769	3919533 11/27/2018	9:48 am	11/30/2018 8:30 am	Georgian Forest Elementary Flr 1 Health Office	0.8
2400770	3919534 11/27/2018	9:50 am	11/30/2018 8:28 am	Georgian Forest Elementary Flr 1 Principal's Offic	0.6
2400771	3919535 11/27/2018	9:51 am	11/30/2018 8:28 am	Georgian Forest Elementary FIr 1 Conference Roo	0.4
2400772	3919536 11/27/2018	9:52 am	11/30/2018 8:29 am	Georgian Forest Elementary Flr 1 Copy Room	0.7
2400773	3919537 11/27/2018	9:54 am	11/30/2018 8:29 am	Georgian Forest Elementary FIr 1 File Room	0.6
2400774	3919538 11/27/2018	9:56 am	11/30/2018 8:31 am	Georgian Forest Elementary Flr 1 Parent Resource	0.5
2400775	3919539 11/27/2018	9:59 am	11/30/2018 8:32 am	Georgian Forest Elementary Flr 1 Media Work Roo	1.5
2400776	3919540 11/27/2018	9:59 am	11/30/2018 8:32 am	Georgian Forest Elementary Flr 1 Media Work Rm	1.5
2400777	3919471 11/27/2018	3 10:01 am	11/30/2018 8:33 am	Georgian Forest Elementary Flr 1 Rm 105	< 0.4

Comment: Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3919312 (Kitchen) and 3919313 (Kitchen Office). Your test is for informational purposes only. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/03/2018 Date Logged:

12/03/2018

Date Analyzed: 12/03/2018 Date Reported: 01/29/2019

Disclaimer:

Report Reviewed By: WIAA

Report Approved By: Shawn Price, Director of Laboratory Operations, AccuStar Labs

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

The uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon

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.



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 Survey2930 Eskridge RoadGeorgian Forest Elementary SchoolFairfax VA 22031Silver Spring MD 20906

Log Devi Number Num	Toet Evn	osure Duration:	Area Tested	Result pCi/L
2400778 39194	72 11/27/2018 10:03 am	11/30/2018 8:35 am	Georgian Forest Elementary Flr 1 Rm 100	0.6
2400779 39194	73 11/27/2018 10:05 am	11/30/2018 8:36 am	Georgian Forest Elementary Flr 1 Rm 101	0.4
2400780 39194	74 11/27/2018 10:06 am	11/30/2018 8:37 am	Georgian Forest Elementary Flr 1 Rm 104	< 0.4
2400781 39194	75 11/27/2018 10:07 am	11/30/2018 8:38 am	Georgian Forest Elementary Flr 1 Rm 103	0.4
2400782 39194	76 11/27/2018 10:08 am	11/30/2018 8:38 am	Georgian Forest Elementary Flr 1 Rm 102	0.4
2400783 39194	77 11/27/2018 10:10 am	11/30/2018 8:41 am	Georgian Forest Elementary Flr 1 Gym	2.0
2400784 39194	78 11/27/2018 10:13 am	11/30/2018 8:42 am	Georgian Forest Elementary Flr 1 Gym Office Dup	0.6
2400785 39194	79 11/27/2018 10:13 am	11/30/2018 8:42 am	Georgian Forest Elementary FIr 1 Gym Office	1.2
2400786 39194	80 11/27/2018 10:19 am	11/30/2018 8:44 am	Georgian Forest Elementary FIr 1 Book Room	0.4
2400787 39194	61 11/27/2018 10:21 am	11/30/2018 8:43 am	Georgian Forest Elementary Flr 1 Room 124	0.4
2400788 39194	62 11/27/2018 10:22 am	11/30/2018 8:43 am	Georgian Forest Elementary Flr 1 Room 126	0.6

Comment: Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3919312 (Kitchen) and 3919313 (Kitchen Office). Your test is for informational purposes only. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/03/2018 Date Logged:

12/03/2018

Date Analyzed: 12/03/2018 Date Reported: 01/29/2019

Disclaimer:

Report Reviewed By: _____ WIAA

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.



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 2930 Eskridge Road **Georgian Forest Elementary School** Silver Spring MD 20906 Fairfax VA 22031

Log Number	Device Number	Test Expos	sure Duration:	Area Tested	Result pCi/L
2400789	3919463 11/27/2018	3 10:24 am	11/30/2018 8:45 am	Georgian Forest Elementary FIr 1 Room 122	1.3
2400790	3919464 11/27/2018	3 10:26 am	11/30/2018 8:46 am	Georgian Forest Elementary FIr 1 Room 121	1.2
2400791	3919465 11/27/2018	3 10:27 am	11/30/2018 8:46 am	Georgian Forest Elementary FIr 1 Room 120	1.9
2400792	3919466 11/27/2018	3 10:29 am	11/30/2018 8:46 am	Georgian Forest Elementary FIr 1 Room 110	1.3
2400793	3919467 11/27/2018	3 10:31 am	11/30/2018 8:47 am	Georgian Forest Elementary Flr 1 Room 111	1.6
2400794	3919468 11/27/2018	3 10:33 am	11/30/2018 8:47 am	Georgian Forest Elementary FIr 1 Room 112	1.1
2400795	3919469 11/27/2018	3 10:33 am	11/30/2018 8:47 am	Georgian Forest Elementary Flr 1 Room 112 Dup	1.2
2400796	3919470 11/27/2018	3 10:35 am	11/30/2018 8:48 am	Georgian Forest Elementary FIr 1 Room 113	2.1
2400797	3919341 11/27/2018	3 10:40 am	11/30/2018 8:48 am	Georgian Forest Elementary FIr 1 Room 109	1.5
2400798	3919342 11/27/2018	3 10:40 am	11/30/2018 8:48 am	Georgian Forest Elementary FIr 1 Room 115	1.5
2400799	3919343 11/27/2018	3 10:40 am	11/30/2018 8:49 am	Georgian Forest Elementary FIr 1 Room 114	0.6

Comment: Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3919312 (Kitchen) and 3919313 (Kitchen Office). Your test is for informational purposes only. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/03/2018 Date Logged:

12/03/2018

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

Date Analyzed: 12/03/2018 Date Reported: 01/29/2019

Disclaimer:

Report Reviewed By: _____ WIAA

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

written interpretation of the results.



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 Survey2930 Eskridge RoadGeorgian Forest Elementary SchoolFairfax VA 22031Silver Spring MD 20906

Log Number	Device Number	Test Exp	osure Duration:	Area Tested	Result pCi/L
2400800	3919344 11/27/20	18 10:42 am	11/30/2018 8:51 am	Georgian Forest Elementary FIr 1 Room 116	< 0.4
2400801	3919345 11/27/20	18 10:44 am	11/30/2018 8:52 am	Georgian Forest Elementary FIr 1 Room 117	0.4
2400802	3919346 11/27/20	18 10:45 am	11/30/2018 8:53 am	Georgian Forest Elementarary Flr 1 Room 119	1.1
2400803	3919347 11/27/20	18 10:47 am	11/30/2018 8:54 am	Georgian Forest Elementary Flr 1 Room 118	< 0.4
2400804	3919348 11/27/20	18 10:52 am	11/30/2018 8:32 am	Georgian Forest Elementary Flr 1 Linkages to Lear	0.4
2400805	3919349 11/27/20	18 10:53 am	11/30/2018 8:33 am	Georgian Forest Elementary FIr 1 Linkages to Lear	0.5
2400806	3919350 11/27/20	18 10:59 am	11/30/2018 8:34 am	Georgian Forest Elementary FIr 1 Linkages to Lear	0.4
2400807	3919301 11/27/20	18 10:59 am	11/30/2018 8:56 am	Georgian Forest Elementary School Flr 1 Rm 108	1.0
2400808	3919302 11/27/20	18 11:02 am	11/30/2018 8:56 am	Georgian Forest Elementary Flr 1 Room 107	0.7
2400809	3919303 11/27/20	18 11:02 am	11/30/2018 8:57 am	Georgian Forest Elementary Flr 1 Media Center	1.2
2400810	3919304 11/27/20	18 11:02 am	11/30/2018 8:57 am	Georgian Forest Elementary Flr 1 Media Center D	0.7

Comment: Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3919312 (Kitchen) and 3919313 (Kitchen Office). Your test is for informational purposes only. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/03/2018 Date Logged:

12/03/2018

Date Analyzed: 12/03/2018 Date Reported: 01/29/2019

Disclaimer:

Report Reviewed By: _____ WIAA

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.



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 Survey2930 Eskridge RoadGeorgian Forest Elementary SchoolFairfax VA 22031Silver Spring MD 20906

Log Number	Device Number	Test Exp	osure Duration:	Area Tested	Result pCi/L
2400811	3919305 11/27/2)18 11:05 am	11/30/2018 8:58 am	Georgian Forest Elementary Flr 1 Media Center	0.9
2400812	3919306 11/27/2)18 11:08 am	11/30/2018 8:47 am	Georgian Forest Elementary Flr 1 Room 109A	1.1
2400813	3919307 11/27/2)18 11:10 am	11/30/2018 8:58 am	Georgian Forest Elementary FIr 1 Media Center Off	1.2
2400814	3919308 11/27/2)18 11:12 am	11/30/2018 8:59 am	Georgian Forest Elementary Flr 1 Room 106	< 0.4
2400815	3919309 11/27/2)18 11:12 am	11/30/2018 8:59 am	Georgian Forest Elementary Flr 1 Staff Lounge Du	< 0.4
2400816	3919310 11/27/2)18 11:15 am	11/30/2018 8:59 am	Georgian Forest Elementary Flr 1 Staff Lounge	< 0.4
2400817	3919311 11/27/2)18 11:17 am	11/30/2018 9:00 am	Georgian Forest Elementary FIr 1 Staff Lounge Tel	< 0.4
2400818	3919312 11/27/2)18 11:23 am	11/30/2018 9:01 am	Georgian Forest Elementary Flr 1 Kitchen	0.7
2400819	3919313 11/27/2)18 11:27 am	11/30/2018 9:02 am	Georgian Forest Elementary Flr 1 Kitchen Office	1.1
2400820	3919314 11/27/2)18 11:29 am	11/30/2018 9:02 am	Georgian Forest Elementary FIr 1 Building Service	< 0.4
2400821	3919315 11/27/2)18 11:29 am	11/30/2018 9:03 am	Georgian Forest Elementary Flr 1 Linkages to Lear	< 0.4

Comment: Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3919312 (Kitchen) and 3919313 (Kitchen Office). Your test is for informational purposes only. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/03/2018 Date Logged:

12/03/2018

Date Analyzed: 12/03/2018 Date Reported: 01/29/2019

Disclaimer:

Report Reviewed By: _____ WIAA

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.



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 Survey2930 Eskridge RoadGeorgian Forest Elementary SchoolFairfax VA 22031Silver Spring MD 20906

Log Number	Device Number	Test Expo	osure Duration:	Area Tested	Result pCi/L
2400822	3919316 11/27/2018	3 11:29 am	11/30/2018 8:35 am	Georgian Forest Elementary Flr 1 Linkages to Lear	< 0.4
2400823	3919317 11/27/2018	3 11:29 am	11/30/2018 8:36 am	Georgian Forest Elementary FIr 1 Linkages to Lear	0.4
2400824	3919318 11/27/2018	3 11:34 am	11/30/2018 9:05 am	Georgian Forest Elementary Flr 2 Room 200	0.5
2400825	3919319 11/27/2018	3 11:36 am	11/30/2018 9:09 am	Georgian Forest Elementary Flr 2 Room 205	1.1
2400826	3919320 11/27/2018	3 11:38 am	11/30/2018 9:07 am	Georgian Forest Elementary Flr 2 Room 216	0.9
2400827	3919449 11/27/2018	3 11:40 am	11/30/2018 9:19 am	Georgian Forest Elementary FIr 2 Room 222	0.7
2400828	3919481 11/27/2018	3 5:48 pm	11/30/2018 9:06 am	Georgian Forest Elementary Flr 2 Room 210	0.4
2400829	3919482 11/27/2018	3 5:51 pm	11/30/2018 9:07 am	Georgian Forest Elementary Flr 2 Room 202A	0.8
2400830	3919483 11/27/2018	3 5:52 pm	11/30/2018 9:08 am	Georgian Forest Elementary Flr 2 Room 209	0.8
2400831	3919484 11/27/2018	3 5:53 pm	11/30/2018 9:08 am	Georgian Forest Elementary Flr 2 Room 208	0.4
2400832	3919485 11/27/2018	3 5:55 pm	11/30/2018 9:08 am	Georgian Forest Elementary FIr 2 Room 201	< 0.4

Comment: Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3919312 (Kitchen) and 3919313 (Kitchen Office). Your test is for informational purposes only. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/03/2018 Date Logged:

12/03/2018

Date Analyzed: 12/03/2018 Date Reported: 01/29/2019

Disclaimer:

Report Reviewed By: _____ WIAA

Report Approved By: Shawn Price, Director of Laboratory Operations, AccuStar Labs

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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 2930 Eskridge Road **Georgian Forest Elementary School** Silver Spring MD 20906 Fairfax VA 22031

Log Number	Device Number	Test Exposure Durati	on:	Area Tested	Result pCi/L
2400833	3919486 11/27/201	8 5:56 pm 11/30/2018	9:08 am	Georgian Forest Elementary Flr 2 Room 202B	1.2
2400834	3919487 11/27/201	8 5:56 pm 11/30/2018	9:08 am	Georgian Forest Elementary Flr 2 Room 202B Du	1.0
2400835	3919488 11/27/201	8 5:57 pm 11/30/2018	9:09 am	Georgian Forest Elementary Flr 2 Room 207	1.0
2400836	3919489 11/27/201	8 5:58 pm 11/30/2018	9:09 am	Georgian Forest Elementary Flr 2 Room 206	1.0
2400837	3919490 11/27/201	8 6:02 pm 11/30/2018	9:10 am	Georgian Forest Elementary Flr 2 Room 204	1.5
2400838	3919541 11/27/201	8 6:03 pm 11/30/2018	9:08 am	Georgian Forest Elementary Flr 2 Room 203	1.5
2400839	3919542 11/27/201	8 6:04 pm 11/30/2018	9:11 am	Georgian Forest Elementary FIr 2 Room 234	1.5
2400840	3919543 11/27/201	8 6:06 pm 11/30/2018	9:12 am	Georgian Forest Elementary Flr 2 Room 211	1.2
2400841	3919544 11/27/201	8 6:07 pm 11/30/2018	9:13 am	Georgian Forest Elementary Flr 2 Room 213	1.0
2400842	3919545 11/27/201	8 6:08 pm 11/30/2018	9:14 am	Georgian Forest Elementary Flr 2 Room 232	1.1
2400843	3919546 11/27/201	8 6:09 pm 11/30/2018	9:10 am	Georgian Forest Elementary Flr 2 Support Room I	0.8

Comment: Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3919312 (Kitchen) and 3919313 (Kitchen Office). Your test is for informational purposes only. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/03/2018 Date Logged:

12/03/2018

Date Analyzed: 12/03/2018 Date Reported: 01/29/2019

Disclaimer:

Report Reviewed By: WIAA

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.



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 2930 Eskridge Road **Georgian Forest Elementary School** Silver Spring MD 20906 Fairfax VA 22031

Log Number	Device Number	Test Expo	sure Duration:	Area Tested	Result pCi/L
2400844	3919547 11/27/2018	8 6:10 pm	11/30/2018 9:10 am	Georgian Forest Elementary Flr 2 Support Room	1.3
2400845	3919548 11/27/2018	3 6:14 pm	11/30/2018 9:15 am	Georgian Forest Elementary Flr 2 Room 231 Dup	0.9
2400846	3919549 11/27/2018	3 6:14 pm	11/30/2018 9:15 am	Georgian Forest Elementary Flr 2 Room 231	0.7
2400847	3919550 11/27/2018	8 6:15 pm	11/30/2018 9:16 am	Georgian Forest Elementary FIr 2 Room 214	1.0
2400848	3919501 11/27/2018	8 6:21 pm	11/30/2018 9:17 am	Georgian Forest Elementary Flr 2 Staff Dev	0.7
2400849	3919502 11/27/2018	8 6:22 pm	11/30/2018 9:18 am	Georgian Forest Elementary Flr 2 Room 217	0.7
2400850	3919503 11/27/2018	8 6:22 pm	11/30/2018 9:18 am	Georgian Forest Elementary Flr 2 Room 219	1.1
2400851	3919504 11/27/2018	8 6:23 pm	11/30/2018 9:19 am	Georgian Forest Elementary FIr 2 Room 220	1.3
2400852	3919505 11/27/2018	8 6:25 pm	11/30/2018 9:19 am	Georgian Forest Elementary FIr 2 Room 223	0.6
2400853	3919506 11/27/2018	3 6:25 pm	11/30/2018 9:20 am	Georgian Forest Elementary Flr 2 Room 223 Dup	1.0
2400854	3919507 11/27/2018	8 6:27 pm	11/30/2018 9:19 am	Georgian Forest Elementary Flr 2 Room 225	0.8

Comment: Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3919312 (Kitchen) and 3919313 (Kitchen Office). Your test is for informational purposes only. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/03/2018 Date Logged:

12/03/2018

Date Analyzed: 12/03/2018 Date Reported: 01/29/2019

Disclaimer:

Report Reviewed By: _____ WIAA

Report Approved By:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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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
2930 Eskridge Road	Georgian Forest Elementary School
Fairfax VA 22031	Silver Spring MD 20906

Log Number	Device Number	Test Expo	osure Duration:	Area Tested	Result pCi/L
2400855	3919508 11/27	/2018 6:28 pm	11/30/2018 9:19	am Georgian Forest Elementary Flr 2 C	ffice 1 0.5
2400856	3919509 11/27	/2018 6:29 pm	11/30/2018 9:20	am Georgian Forest Elementary Flr 2 C	ffice 2 0.5
2400857	3919510 11/27	/2018 6:30 pm	11/30/2018 9:21	am Georgian Forest Elementary Flr 2 C	ffice 3 0.8
2400858	3919577 11/27	/2018 9:45 am	11/30/2018 9:21	am Georgian Forest Elementary Flr x F	2m x < 0.4
2400859	3918016 11/27	/2018 9:45 am	11/30/2018 9:21	am Georgian Forest Elementary Flr x R	m x < 0.4
2400860	3919428 11/27	/2018 6:00 am	11/30/2018 9:21	am Georgian Forest Elementary School	Flr x Rm x < 0.4
2401261	3919424 11/27	/2018 6:00 am	11/30/2018 12:0	0 am Georgian Forest Elementary School	< 0.4

Comment: Per ANSI/AARST MAH 2014, requirements for test locations within a room were not met for device 3919312 (Kitchen) and 3919313 (Kitchen Office). Your test is for informational purposes only. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/03/2018 Date Logged: 12/03/2018

Date Analyzed: 12/03/2018 Date Reported: 01/29/2019

Disclaimer:

Report Reviewed By: WIAA

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

NELAC NY 11769 NRPP 103216 AL NRSB ARL0017

Laboratory Report for:

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

Property Tested: Project # 04481387-1

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

MCPS Radon Survey **Georgian Forest Elementary School** MD 02906

Log Device Number Number	. Test Expo	osure Duration:	Area Tested	Result pCi/L
2401262 3888470	11/27/2018 10:10 am	11/30/2018 8:40 am	Bldg Georgian Forest Elementary School Flr 1 R	2.1
2401263 3888469	11/27/2018 11:17 am	11/30/2018 9:00 am	Bldg Georgian Forest Elementary School Flr 1 R	0.8
2401264 3888468	11/27/2018 11:23 am	11/30/2018 9:01 am	Bldg Georgian Forest Elementary School Flr 1 R	0.7

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

Distributed by: Intertek-PSI (VA)

Date Received: 12/03/2018 Date Logged:

12/03/2018

Date Analyzed: 12/04/2018

Date Reported: 12/04/2018

Disclaimer:

Report Reviewed By: ______ WIAA

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

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	9:47 am 12/10/2018 9:47 am	Spike	35.8
3204129 3926835 12/07/2018	9:47 am 12/10/2018 9:47 am	Spike	35.0
3204130 3926836 12/07/2018	9:47 am 12/10/2018 9:47 am	Spike	34.5
3204131 3926837 12/07/2018	9:47 am 12/10/2018 9:47 am	Spike	34.6
3204132 3926838 12/07/2018	9:47 am 12/10/2018 9:47 am	Spike	34.3
3204133 3926839 12/07/2018	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 Derformed By: Unknown	~				
Test Performed By: Unknowr	1				
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
				\mathcal{O}	
Report Review	ed By:	An Kartin	Report Approved By:	XX	
Disclaimer:	\subset	Š,	Shawn Price, Dire	ector of Laboratory Oper	ations, AccuStar Labs
,		0	uncertainty include statistical variations, d erence with test conditions may influence	,	ions in radon
This report may only be transferred to	a third party in its entir	ety Analytical results	relate to the samples AS RECEIVED B		Results 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. Ashburton ES
- 2. Carderock Springs ES
- 3. Diamond ES
- 4. Fox Chapel ES
- 5. Baker MS
- 6. Damascus ES
- 7. Clemente MS
- 8. Clopper Mill ES

- 9. Broad Acres ES
- 10. Greencastle ES
- 11. Harmony Hills ES
- 12. Silver Spring International MS
- 13. Gaithersburg MS
- 14. Garrett Park ES
- 15. New Hampshire Estates ES
- 16. Georgian Forest ES

	Date	Initials
Radon Test Kits Deployed	11/27/2018	NL
Radon Test Kits Sampled	11/30/2018	NL
Radon Test Kits Shipped to Lab*	11/30/2018	NL
	12/01/2018;	
Radon Test Kits Received by Lab*	12/02/2018;	NL
	12/03/2018	

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