



**MCPS RADON TESTING – EXECUTIVE SUMMARY**

Site Name	Ronald McNair Elementary School
Date of Test Report	1/25/2023
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	41
# Rooms $\geq$ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.0 pCi/L

Project Status:

1. 5-Year Re-Testing Completed.



January 25, 2023

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

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

Location: Ronald McNair Elementary School  
13881 Hopkins Road  
Germantown, MD 20874

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 Ronald McNair Elementary School located at 13881 Hopkins Rd. Germantown, MD 20874 (subject site).

**Scope of Services:**

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

KCI visited the site on December 19, 2022 and deployed forty-seven (47) 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 December 22, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Accustar Labs - MA for analysis by gamma-ray spectroscopy.

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

**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 23°F to 55°F. Maximum sustained winds ranged from 0-18 miles per hour. Average humidity was around 75% with 0.0 inches of precipitation (rain) was recorded during testing period.

**Results:**

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

The results of the radon test analysis indicated the following:

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

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

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

Sincerely,



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

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

# ATTACHMENT A

## Floor Plan With Test Locations

# ATTACHMENT B

## Radon Test Summary Spreadsheet

**Table Notes:**

AC- Activated Charcoal

ACI- Air Check, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

OC- Quality Control

Table 1- Radon Testing Results		
Ronald McNair ES		
Test Period: 12/19/2022 - 12/22/2022		
Kit Number	Room / Area	Result
11287023	1	< 0.3
11287046	1	0.8
11287057	1	< 0.3
11287053	2	< 0.3
11287062	3	< 0.3
11287063	4	< 0.3
11287058	5	< 0.3
11287072	5	< 0.3
11287073	6	< 0.3
11287051	7	< 0.3
11287015	8	0.7
11287052	9	< 0.3
11287016	15	< 0.3
11287078	17	< 0.3
11287066	22	< 0.3
11287024	ART ROOM	< 0.3
11287081	ASSISTANT PRINCIPAL	0.6
11287031	CAFETERIA	< 0.3
11287032	CAFETERIA	< 0.3
11287047	COMMUNICATION CTR	< 0.3
11287008	CONFERENCE	< 0.3
11287048	CONTROL ROOM	< 0.3
11287056	DUAL PURPOSE	< 0.3
11287074	EXAM	< 0.3
11287055	GENERAL MUSIC	1.0
11287061	GYM	< 0.3
11287064	GYM	< 0.3
11287065	GYM OFFICE	< 0.3
11287069	HEALTH	0.5
11287077	HEALTH	< 0.3
11287079	HEALTH	0.8
11287038	K1	< 0.3
11287039	K2	< 0.3
11287033	K3	< 0.3
11287040	K4	< 0.3
11287054	MATERIAL PREP MC	< 0.3
11287017	MEDIA CENTER	< 0.3
11287049	MEDIA STORAGE	< 0.3
11287041	MUSIC ROOM	0.8
11287080	OFFICE	0.7
11287086	PRINCIPAL	< 0.3
11287025	READING RESOURCE 1	< 0.3



Table 1- Radon Testing Results		
Ronald McNair ES		
Test Period: 12/19/2022 - 12/22/2022		
Kit Number	Room / Area	Result
11287034	READING RESOURCE 1	< 0.3
11287042	SCHOOL COUNSELOR	< 0.3
11287071	STAFF LOUNGE	< 0.3
11287050	STAFF ROOM	< 0.3
11287082	WORK ROOM	< 0.3

Table 2- Radon Testing Results			
Ronald McNair ES			
Test Period: 12/19/22 - 12/22/22			
Kit Number	QC Type	Room / Area	Result
11287023	D	1	< 0.3
11287057	FB	1	< 0.3
11287072	D	5	< 0.3
11287069	D	Health	0.5
11287077	FB	Health	< 0.3
11287025	D	Reading Resource 1	< 0.3
11288518	OB	OFFICE BLANK	< 0.3
11287685	TB	TRAVEL BLANK	< 0.3



# ATTACHMENT C

## Laboratory Analytical Results

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11287023	1	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287057	1	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287046	1	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	0.8 ± 0.5	2022-12-28
11287016	15	2022-12-19 @ 5:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287078	17	2022-12-19 @ 5:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287053	2	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287066	22	2022-12-19 @ 5:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287062	3	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287063	4	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287072	5	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287058	5	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287073	6	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287051	7	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287015	8	2022-12-19 @ 5:00 pm	2022-12-22 @ 1:00 pm	0.7 ± 0.5	2022-12-28
11287052	9	2022-12-19 @ 5:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287024	ART ROOM	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287081	ASSISTANT PRINCIPAL	2022-12-19 @ 5:00 pm	2022-12-22 @ 12:00 pm	0.6 ± 0.5	2022-12-28
11287031	CAFETERIA	2022-12-19 @ 3:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287032	CAFETERIA	2022-12-19 @ 3:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287047	COMMUNICATION CTR	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287008	CONFERENCE	2022-12-19 @ 5:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11287048	CONTROL ROOM	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287056	DUAL PURPOSE	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287074	EXAM	2022-12-19 @ 5:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11287055	GENERAL MUSIC	2022-12-19 @ 4:00 pm	2022-12-22 @ 12:00 pm	1.0 ± 0.5	2022-12-28
11287064	GYM	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287061	GYM	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287065	GYM OFFICE	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287069	HEALTH	2022-12-19 @ 5:00 pm	2022-12-22 @ 12:00 pm	0.5 ± 0.5	2022-12-28
11287079	HEALTH	2022-12-19 @ 5:00 pm	2022-12-22 @ 12:00 pm	0.8 ± 0.5	2022-12-28
11287077	HEALTH	2022-12-19 @ 5:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11287038	K1	2022-12-19 @ 3:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11287039	K2	2022-12-19 @ 3:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11287033	K3	2022-12-19 @ 3:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11287040	K4	2022-12-19 @ 3:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11287054	MATERIAL PREP MC	2022-12-19 @ 4:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11287017	MEDIA CENTER	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28

Radon test result report for:

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
11287049	MEDIA STORAGE	2022-12-19 @ 4:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11287041	MUSIC ROOM	2022-12-19 @ 4:00 pm	2022-12-22 @ 12:00 pm	0.8 ± 0.5	2022-12-28
11287080	OFFICE	2022-12-19 @ 5:00 pm	2022-12-22 @ 12:00 pm	0.7 ± 0.5	2022-12-28
11287086	PRINCIPAL	2022-12-19 @ 5:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28
11287025	READING RESOURCE 1	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287034	READING RESOURCE 1	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287042	SCHOOL COUNSELOR	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287071	STAFF LOUNGE	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287050	STAFF ROOM	2022-12-19 @ 4:00 pm	2022-12-22 @ 1:00 pm	< 0.3	2022-12-28
11287082	WORK ROOM	2022-12-19 @ 5:00 pm	2022-12-22 @ 12:00 pm	< 0.3	2022-12-28

# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KC1 TECHNOLOGIES, INC Job Number 208343

NOMINAL Conditions: Radon Conc 34.7 pCi/L Rel. Hum 49.4 % Temp. 69.6 F

Date Start: 12/24/22 Date Stop: 12/27/22 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0810 Time Stop: 0810 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

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

11285109, 11285110, 11285101

THRU 11285103

BY LEFT

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

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

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

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

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

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

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

---

December 29, 2022

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

---

Radon test result report for:

**OFFICE**

**MAIN**

---

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
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

---

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





### Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Week 3 December Schools

Name of Schools:

1. Clopper Mill ES
2. Cold Spring ES
3. Fox Chapel ES
4. Gaithersburg HS
5. Longview School
6. North Lake Center
7. Ronald McNair ES
8. Rosemont ES
9. S. Christa McAuliffe ES
10. Spark M. Matsunaga ES
11. William B. Gibbs, JR. ES

---

	Date	Initials
Radon Test Kits Deployed	12/19/2022	BMM
Radon Test Kits Collected	12/22/2022	BMM
Radon Test Kits Shipped to Lab*	12/22/2022	BMM
Radon Test Kits Received by Lab*	12/28/2022	BMM

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



## MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

**Executive Summary:**  
**Ronald A. McNair Elementary School**  
13881 Hopkins Road,  
Germantown, MD 20874

Date of Test Report:	2/5/2019
Round of Testing:	Initial Follow-up Post Remediation 2 Year Testing <b>5 Year Testing</b> HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested:	43
# of Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	< 0.4
High Value:	1.3

### Project Status

**Initial testing complete:** No further action at this time



February 5, 2019

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

Re: Radon Testing Services

Location: Ronald A. McNair Elementary School  
13881 Hopkins Road,  
Germantown, MD 20874

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 Ronald A. McNair Elementary School, located at 13881 Hopkins Road, Germantown, MD 20874 (subject site).

**Scope of Services:**

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

PSI visited the site on December 4, 2018 and deployed fifty-six (56) activated charcoal (AC) radon test kits. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on December 7, 2018 to retrieve the radon sampling test kits. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

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



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

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

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

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

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

### **Results:**

The results of the radon test analysis indicated the following:

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

Notes:  
D -Duplicate Sample

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

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

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



Respectfully Submitted,

**INTERTEK-PSI**

A handwritten signature in black ink that reads "Nand Kaushik". The signature is fluid and cursive.

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

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

# **ATTACHMENT B**

Radon Test Summary Spreadsheet

<b>Radon Testing Results</b>		
<b>Robert A. McNair Elementary School</b>		
<b>Testing Period: 12/4/18 - 12/7/18</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result (pCi/L)</b>
3888405	APR	<0.4
3888425	APR	0.4
3918559	Art	<0.4
3918552	Assistant Principal	<0.4
3918580	BSM	<0.4
3918554	Conference Room	<0.4
3198329	Copier Room	<0.4
3918577	Counselor	<0.4
3918319	CR21	<0.4
3918318	CR32	<0.4
3918545	CR1	<0.4
3918330	CR11	<0.4
3918546	CR2	<0.4
3918547	CR3	<0.4
3918548	CR4	<0.4
3918572	CR5	<0.4
3918573	CR6	<0.4
3918574	CR7	<0.4
3918575	CR8	<0.4
3918576	CR9	0.4
3918558	DPR	<0.4
3918568	GOF	<0.4
3918550	Gym	<0.4
3888334	Gym	0.5
3918549	Gym Office	<0.4
3918551	Health	<0.4
3918570	Health Exam room	<0.4
3918578	Human Resource	<0.4
3918541	IMC	<0.4
3918542	IMC	<0.4
3918543	IMC Office	<0.4
3918561	Instrumental Music	0.5
3918566	K1	<0.4
3918564	K2	<0.4
3918563	K3	<0.4
3918562	K4	<0.4
3918327	Kitchen	<0.4
3918544	Media Storage	<0.4
3918557	Music	<0.4
3918553	Principal	<0.4
3918560	Reading	<0.4
3918550	Staff Lounge	<0.4
3918567	Stage	1.3

<b>Radon Testing Results</b>		
<b>Robert A. McNair Elementary School</b>		
<b>Testing Period: 12/4/18 - 12/7/18</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result (pCi/L)</b>
3918325	TV Control Room	<0.4
3918307	TV Studio	<0.4
3918555	Workroom	<0.4



<b>Radon Testing Results</b>		
<b>Robert A. McNair Elementary School</b>		
<b>Testing Period: 12/4/18 - 12/7/18</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result (pCi/L)</b>
3918569	GOF (D)	<0.4
3918579	Human Resource	<0.4
3918565	K2 (D)	<0.4
3917328	Kitchen (D)	<0.4
3918571	Staff Lounge (D)	<0.4
3918556	Workroom (D)	<0.4
3927602	Field Blank	<0.4
3927723	Field Blank	<0.4
3917881	Office Blank	<0.4
3927722	Transit Blank	<0.4

**Table Notes:**

D – Duplicate

FB – Field Blank

OB – Office Blank

TB – Transit Blank

QC – Quality Control

# **ATTACHMENT C**

Laboratory Analytical Results

NRPP 105011 AL  
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey  
Ronald A. McNair Elementary School  
Darnestown MD 20874

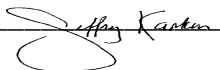
Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
3202603	3918327	12/04/2018 8:28 am	12/07/2018 7:45 am	Floor First Room Kitchen	< 0.4
3202604	3918328	12/04/2018 8:28 am	12/07/2018 7:45 am	Floor First Room Kitchen Duplicate	< 0.4
3202605	3918329	12/04/2018 8:32 am	12/07/2018 7:46 am	Floor First Room Copier Room	< 0.4
3202606	3918561	12/04/2018 7:00 am	12/07/2018 7:00 am	Floor First Room Instrumental Music	0.5
3202607	3918562	12/04/2018 7:02 am	12/07/2018 7:01 am	Floor First Room K4	< 0.4
3202608	3918563	12/04/2018 7:04 am	12/07/2018 7:02 am	Floor First Room K3	< 0.4
3202609	3918564	12/04/2018 7:06 am	12/07/2018 7:04 am	Floor First Room K2	< 0.4
3202610	3918565	12/04/2018 7:06 am	12/07/2018 7:04 am	Floor First Room K2 Duplicate	< 0.4
3202611	3918566	12/04/2018 7:10 am	12/07/2018 7:05 am	Floor First Room K1	< 0.4
3202612	3918567	12/04/2018 7:12 am	12/07/2018 7:06 am	Floor First Room Stage	1.3
3202613	3918568	12/04/2018 7:14 am	12/07/2018 7:08 am	Floor First Room GOF	< 0.4


**Comment:** AMENDED REPORT for 3918550 on 1-8-19 to reflect Staff Lounge.

Test Performed By: Rinzo Renthlei

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018 Date Logged: 12/08/2018 Date Analyzed: 12/08/2018 Date Reported: 12/17/2018

Report Reviewed By: 

Report Approved By: 

**Disclaimer:**

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

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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

NRPP 105011 AL  
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey  
Ronald A. McNair Elementary School  
Darnestown MD 20874

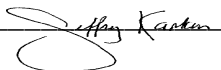
Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
3202614	3918569	12/04/2018 7:14 am	12/07/2018 7:08 am	Floor First Room GOF Duplicate	< 0.4
3202615	3918570	12/04/2018 7:18 am	12/07/2018 7:09 am	Floor First Room Health Exam Room	< 0.4
3202616	3918551	12/04/2018 7:20 am	12/07/2018 7:10 am	Floor First Room Health	< 0.4
3202617	3918552	12/04/2018 7:22 am	12/07/2018 7:11 am	Floor First Room Assisstant Principal	< 0.4
3202618	3918553	12/04/2018 7:24 am	12/07/2018 7:12 am	Floor First Room Principal	< 0.4
3202619	3918554	12/04/2018 7:26 am	12/07/2018 7:13 am	Floor First Room Conference Room	< 0.4
3202620	3918555	12/04/2018 7:28 am	12/07/2018 7:15 am	Floor First Room Workroom	< 0.4
3202621	3918556	12/04/2018 7:28 am	12/07/2018 7:15 am	Floor First Room Workroom Duplicate	< 0.4
3202622	3918557	12/04/2018 7:32 am	12/07/2018 7:16 am	Floor First Room Music	< 0.4
3202623	3918558	12/04/2018 7:34 am	12/07/2018 7:17 am	Floor First Room Dual Purpose	< 0.4
3202624	3918559	12/04/2018 7:36 am	12/07/2018 7:18 am	Floor First Room Art	< 0.4


**Comment:** AMENDED REPORT for 3918550 on 1-8-19 to reflect Staff Lounge.

Test Performed By: Rinzo Renthlei

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018    Date Logged: 12/08/2018    Date Analyzed: 12/08/2018    Date Reported: 12/17/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

**Disclaimer:**

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

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

NRPP 105011 AL  
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey  
Ronald A. McNair Elementary School  
Darnestown MD 20874

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
3202625	3918560	12/04/2018 7:38 am	12/07/2018 7:19 am	Floor First Room Reading	< 0.4
3202626	3918541	12/04/2018 7:40 am	12/07/2018 7:20 am	Floor First Room IMC	< 0.4
3202627	3918542	12/04/2018 7:42 am	12/07/2018 7:21 am	Floor First Room IMC	< 0.4
3202628	3918543	12/04/2018 7:44 am	12/07/2018 7:22 am	Floor First Room IMC Office	< 0.4
3202629	3918544	12/04/2018 7:46 am	12/07/2018 7:23 am	Floor First Room Media Storage	< 0.4
3202630	3918545	12/04/2018 7:48 am	12/07/2018 7:24 am	Floor First Room CR1	< 0.4
3202631	3918546	12/04/2018 7:50 am	12/07/2018 7:25 am	Floor First Room CR2	< 0.4
3202632	3918547	12/04/2018 7:52 am	12/07/2018 7:26 am	Floor First Room CR3	< 0.4
3202633	3918548	12/04/2018 7:54 am	12/07/2018 7:27 am	Floor First Room CR4	< 0.4
3202634	3918549	12/04/2018 7:56 am	12/07/2018 7:28 am	Floor First Room Gym Office	< 0.4
3202635	3918550	12/04/2018 7:58 am	12/07/2018 7:29 am	Floor First Room Staff Lounge	< 0.4

**Comment:** AMENDED REPORT for 3918550 on 1-8-19 to reflect Staff Lounge.

Test Performed By: Rinzo Renthlei

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018 Date Logged: 12/08/2018 Date Analyzed: 12/08/2018 Date Reported: 12/17/2018

Report Reviewed By: 

Report Approved By: 

**Disclaimer:**

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

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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

NRPP 105011 AL  
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey  
Ronald A. McNair Elementary School  
Darnestown MD 20874

Log Number	Device Number	Test Exposure	Duration:	Area Tested	Result pCi/L
3202636	3918571	12/04/2018 8:02 am	12/07/2018 7:32 am	Floor First Room Staff Lounge Duplicate	< 0.4
3202637	3918572	12/04/2018 8:06 am	12/07/2018 7:33 am	Floor First Room CR5	< 0.4
3202638	3918573	12/04/2018 8:08 am	12/07/2018 7:34 am	Floor First Room CR6	< 0.4
3202639	3918574	12/04/2018 8:10 am	12/07/2018 7:35 am	Floor First Room CR7	< 0.4
3202640	3918575	12/04/2018 8:12 am	12/07/2018 7:36 am	Floor First Room CR8	< 0.4
3202641	3918576	12/04/2018 8:14 am	12/07/2018 7:37 am	Floor First Room CR9	0.4
3202642	3918577	12/04/2018 8:16 am	12/07/2018 7:38 am	Floor First Room Councelor	< 0.4
3202643	3918578	12/04/2018 8:18 am	12/07/2018 7:40 am	Floor First Room Human Resource	< 0.4
3202644	3918579	12/04/2018 8:18 am	12/07/2018 7:40 am	Floor First Room Human Resource Duplicate	< 0.4
3202645	3918580	12/04/2018 8:22 am	12/07/2018 7:41 am	Floor First Room BSM	< 0.4
3202646	3918307	12/04/2018 8:24 am	12/07/2018 7:42 am	Floor First Room TV Studio	< 0.4

**Comment:** AMENDED REPORT for 3918550 on 1-8-19 to reflect Staff Lounge.

Test Performed By: Rinzo Renthlei

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018 Date Logged: 12/08/2018 Date Analyzed: 12/08/2018 Date Reported: 12/17/2018

Report Reviewed By: 

Report Approved By: 

**Disclaimer:**

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

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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

NRPP 105011 AL  
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey  
Ronald A. McNair Elementary School  
Darnestown MD 20874

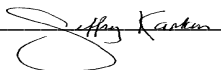
Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
3202647	3918325	12/04/2018 8:26 am	12/07/2018 7:43 am	Floor First Room TV Control room	< 0.4
3202648	3918330	12/04/2018 8:38 am	12/07/2018 7:49 am	Floor Second Room CR11	< 0.4
3202649	3918318	12/04/2018 8:40 am	12/07/2018 7:50 am	Floor Second Room CR 32	< 0.4
3202650	3918319	12/04/2018 8:42 am	12/07/2018 7:51 am	Floor Second Room CR 21	< 0.4
3202651	3917881	12/04/2018 6:00 am	12/07/2018 6:00 pm	Floor NA Room Office Blank	< 0.4
3202652	3927722	12/04/2018 6:00 am	12/07/2018 6:00 pm	Floor NA Room Transit Blank	< 0.4
3202653	3927602	12/04/2018 7:00 am	12/07/2018 8:00 am	Floor NA Room Field Blank	< 0.4
3202654	3927723	12/04/2018 7:00 am	12/07/2018 8:00 am	Floor NA Room Field Blank	< 0.4


**Comment:** AMENDED REPORT for 3918550 on 1-8-19 to reflect Staff Lounge.

Test Performed By: Rinzo Renthlei

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018 Date Logged: 12/08/2018 Date Analyzed: 12/08/2018 Date Reported: 12/17/2018

Report Reviewed By: 

Report Approved By: 

**Disclaimer:**

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

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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


MCPS Radon Survey  
Ronald A. McNair Elementary School  
MD 20874


Log Number	Device Number	Test Exposure Duration:		Area Tested		Result pCi/L
2405269	3888405	12/04/2018 8:34 am	12/07/2018 7:47 am	Floor First	Room APR	< 0.4
2405270	3888425	12/04/2018 8:36 am	12/07/2018 7:48 am	Floor First	Room APR	0.4

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

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018    Date Logged:    Date Analyzed: 12/10/2018    Date Reported: 01/02/2019

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

**Disclaimer:**

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

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

NELAC NY 11769  
NRPP 103216 AL  
NRSB ARL0017

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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


MCPS Radon Survey  
Ronald A. McNair Elementary School  
MD 20874


Log Number	Device Number	Test	Exposure	Duration:	Area Tested	Result pCi/L
2405268	3888334	12/04/2018	8:00 am	12/07/2018 7:30 am	Floor First Room Gym	0.5

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

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018    Date Logged: 12/10/2018    Date Analyzed: 12/10/2018    Date Reported: 01/04/2019

Report Reviewed By: 

Report Approved By: 

**Disclaimer:**

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.

NRPP 105011 AL  
NRSB ARL0007  
Ohio RL41

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

Laboratory Report for:

Property Tested:

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

MCPS Radon Survey  
4514 Taylorsville Road  
Dayton OH 45424

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

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

Test Performed By: Unknown

Distributed by: Intertek-PSI (VA)

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

Report Reviewed By: 

Report Approved By: 

**Disclaimer:**

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

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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

# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT Intertek - PSI

Job Number 187732

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

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

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

Time Start: 0947 Time Stop: 0947

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

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

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

3926831 thru 3926840

G2 left

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

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

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

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

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

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

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

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

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

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

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

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

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



## Chain of Custody

Project Name: MCPS Radon Survey 2018

Name of Schools:

1. Grosvenor Center (Luxmanor ES)
2. Montrose Center
3. Gibbs ES
4. Westbrook ES
5. Hadley Farms (Resnik ES)
6. Kingsview MS
7. Longview School
8. Lynnbrook Center
9. Magruder HS
10. McAuliffe ES
11. McNair ES
12. Mill Creek Towne ES
13. Martin Luther King MS
14. Montgomery Village MS
15. Great Seneca Creek ES
16. Quince Orchard HS
17. Redland MS
18. North Bethesda MS
19. Spark Matsunaga ES
20. Whetstone ES
21. Wood Acres ES

---

	Date	Initials
Radon Test Kits Deployed	12/04/2018	ML
Radon Test Kits Sampled	12/07/2018	ML
Radon Test Kits Shipped to Lab*	12/07/2018	ML
Radon Test Kits Received by Lab*	12/08/2018; 12/09/2018	ML

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



### MCPS RADON TESTING

Executive Summary: Ronald McNair Elementary School

Date of Test Report:	3/4/2016 (Rev 1)
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	44
# Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	1.4

Project Status:

Initial testing completed; no further action at this time.



March 4, 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 # 12146341.20

Location: Ronald McNair Elementary School  
13881 Hopkins Road  
Germantown, MD 20874

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 Ronald McNair Elementary School, located at 13881 Hopkins Road in Germantown, Maryland 20874 (subject site).

**Scope of Services:**

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

KCI visited the site on December 21, 2015 and deployed fifty-eight (58) 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 24, 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:

<b>Radon Concentration</b>	<b>Room</b>	<b>Result</b>
$\geq 4.0$ pCi/L	None	n/a
$< 4.0$ pCi/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.



Sincerely,



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

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

# ATTACHMENT A

## Floor Plan With Test Locations

# ATTACHMENT B

## Radon Test Summary Spreadsheet

**Table Notes:**

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

<b>Radon Testing Results</b>		
<b>Ronald A McNair ES</b>		
<b>Test Period: 12/21/15-12/24/15</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7710619	ART	0.6
7710646	ASST PRINCIPAL	< 0.3
7710607	CAFETERIA	< 0.3
7710609	CAFETERIA	< 0.3
7710621	CLASS 1	0.6
7710566	CLASS 13	< 0.3
7710611	CLASS 17	< 0.3
7710651	CLASS 2	0.8
7710536	CLASS 22	1.3
7710624	CLASS 3	< 0.3
7710623	CLASS 4	0.8
7710628	CLASS 5	< 0.3
7710629	CLASS 6	0.6
7710632	CLASS 7	0.6
7710657	CLASS 8	0.6
7710633	CLASS 9	0.7
7710661	CONFERENCE	< 0.3
7710642	DUAL	< 0.3
7710640	GUIDANCE	0.7
7710604	GUIDANCE 2	< 0.3
7710625	GYM	1.1
7710626	GYM	1.0
7710644	HEALTH	0.7
7710643	INSTRUMENT	1.4
7710662	K1	< 0.3
7710659	K2	< 0.3
7710613	K3	0.7
7710602	K4	< 0.3
7710647	MAIL	< 0.3
7710616	MEDIA	0.8
7710601	MEDIA	0.8
7710612	MEDIA OFFICE	0.7
7710618	MUSIC	< 0.3
7710645	OFFICE	0.9
7710636	P1	< 0.3
7710635	P2	< 0.3
7710637	P3	< 0.3
7710634	P4	< 0.3
7710631	P5	< 0.3
7710639	P6	< 0.3
7710649	PRINCIPAL	< 0.3
7710620	READ1	0.6
7710603	READ2	< 0.3
7710606	SERVICE	0.8
7710627	STAFF	0.7
7710610	STAGE	< 0.3

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Ronald A McNair ES</b>		
<b>Test Period: 12/21/15-12/24/15</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7710605	TV STUDIO	< 0.3

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Ronald A McNair ES</b>		
<b>Test Period: 12/21/15-12/24/15</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result</b>
7710622	D (CLASS 1)	0.9
7710660	D (CLASS 13)	< 0.3
7710665	D (CLASS 9)	0.8
7710638	D (K1)	< 0.3
7710608	D (P6)	< 0.3
7710615	D (TV STUDIO)	< 0.3
7710614	FB (CLASS 22)	< 0.3
7710630	FB (CLASS 6)	< 0.3
7710641	FB (K3)	< 0.3
7710617	FB (MEDIA)	< 0.3
7710406	OB (0)	< 0.3

Table Note:

\* Missing or Compromised Sample

# ATTACHMENT C

## Laboratory Analytical Results



Radon test result report for:  
**RONALD A MCNAIR ES**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7710406	0	2015-12-21 @ 6:00 pm	2015-12-24 @ 1:00 pm	< 0.3	2015-12-28
7710619	ART	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	0.6 ± 0.3	2015-12-28
7710646	ASST PRINCIPAL	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710607	CAFETRIA	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710609	CAFETRIA	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710621	CLASS 1	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.6 ± 0.3	2015-12-28
7710622	CLASS 1	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.9 ± 0.3	2015-12-28
7710566	CLASS 13	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710660	CLASS 13	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710611	CLASS 17	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7710651	CLASS 2	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.8 ± 0.3	2015-12-28
7710614	CLASS 22	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7710536	CLASS 22	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	1.3 ± 0.4	2015-12-28
7710624	CLASS 3	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7710623	CLASS 4	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.8 ± 0.3	2015-12-28
7710628	CLASS 5	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710629	CLASS 6	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.6 ± 0.4	2015-12-29
7710630	CLASS 6	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710632	CLASS 7	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.6 ± 0.3	2015-12-28
7710657	CLASS 8	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.6 ± 0.3	2015-12-28
7710633	CLASS 9	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.7 ± 0.3	2015-12-28
7710665	CLASS 9	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.8 ± 0.3	2015-12-28
7710661	CONFERENCE	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710642	DUAL	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710640	GUIDANCE	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.7 ± 0.3	2015-12-29
7710604	GUIDANCE 2	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710625	GYM	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	1.1 ± 0.3	2015-12-28
7710626	GYM	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	1.0 ± 0.3	2015-12-28
7710644	HEALTH	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	0.7 ± 0.4	2015-12-29
7710643	INSTRUMENT	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	1.4 ± 0.5	2015-12-29
7710662	K1	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710638	K1	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710659	K2	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710613	K3	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	0.7 ± 0.4	2015-12-29
7710641	K3	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710602	K4	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710647	MAIL	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29

January 12, 2016  
**LABORATORY ANALYSIS  
REPORT \*\***

Radon test result report for:  
**RONALD A MCNAIR ES  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7710616	MEDIA	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	0.8 ± 0.3	2015-12-28
7710601	MEDIA	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	0.8 ± 0.3	2015-12-28
7710617	MEDIA	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7710612	MEDIA OFFICE	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	0.7 ± 0.3	2015-12-28
7710618	MUSIC	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710645	OFFICE	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	0.9 ± 0.4	2015-12-29
7710636	P1	2015-12-21 @ 3:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-29
7710635	P2	2015-12-21 @ 3:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-29
7710637	P3	2015-12-21 @ 3:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-29
7710634	P4	2015-12-21 @ 3:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-29
7710631	P5	2015-12-21 @ 3:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-28
7710639	P6	2015-12-21 @ 3:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-29
7710608	P6	2015-12-21 @ 3:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-29
7710649	PRINCIPAL	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710620	READ 1	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.6 ± 0.4	2015-12-29
7710603	READ 2	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710606	SERVICE	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.8 ± 0.4	2015-12-29
7710627	STAFF	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.7 ± 0.4	2015-12-29
7710610	STAGE	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7710605	TV STUDIO	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28
7710615	TV STUDIO	2015-12-21 @ 2:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-28

December  
29,  
2015

**LABORATORY ANALYSIS  
REPORT \*\***

Radon test result report for:  
**TRANSIT DEC 14 2015**  
**NONE**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7704395	TRANSIT 1	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706508	TRANSIT 10	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706510	TRANSIT 11	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706511	TRANSIT 12	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706505	TRANSIT 13	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704371	TRANSIT 14	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706506	TRANSIT 15	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704381	TRANSIT 16	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704399	TRANSIT 17	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704390	TRANSIT 18	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704396	TRANSIT 2	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704364	TRANSIT 3	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704370	TRANSIT 4	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704368	TRANSIT 5	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706524	TRANSIT 6	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706526	TRANSIT 7	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706518	TRANSIT 8	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706516	TRANSIT 9	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16

December  
23,  
2015

**LABORATORY ANALYSIS  
REPORT \*\***

Spike Sample Laboratory Results

Radon test result report for:

**MCPS**

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

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

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

**EXPOSURE IN BOWSER-MORNER RADON CHAMBER**

CLIENT KCI Technologies Inc. Job Number 173224

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

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

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

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

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

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

F3 Left

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

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

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

\_\_\_\_\_  
\_\_\_\_\_

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

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

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

\_\_\_\_\_  
\_\_\_\_\_

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



## Chain of Custody

Project Name: MCPS Radon Phase II

School Names:

- |                           |                             |                           |
|---------------------------|-----------------------------|---------------------------|
| 1. Bannockburn ES         | 11. Sherwood HS             | 21. Fairland ES           |
| 2. Walt Whitman HS        | 12. Hadley Farms            | 22. Cannon Road ES        |
| 3. Walter Johnson HS      | 13. S. Christa McAuliffe ES | 23. Richard Montgomery HS |
| 4. North Chevy Chase ES   | 14. Ronald A. McNair ES     | 24. Brooke Grove ES       |
| 5. Piney Branch ES        | 15. MLK MS                  | 25. Belmont ES            |
| 6. Forest Knolls ES       | 16. Ashburton ES            | 26. Emory Grove           |
| 7. Newport Mill MS        | 17. Bradley Hills ES        | 27. Clarksburg HS         |
| 8. Broad Acres ES         | 18. Flora M. Singer ES      | 28. Clarksburg ES         |
| 9. Briggs Chaney MS       | 19. Woodlin ES              | 29. John T. Baker MS      |
| 10. Blair G. Ewing Center | 20. Montgomery Knolls ES    |                           |

---

	Date	Initials
Radon Test Kits Deployed	12/21/2015	JM
Radon Test Kits Collected	12/24/2015	JM
Radon Test Kits Shipped to Lab*	12/24/2015	JM
Radon Test Kits Received by Lab*	12/28/2015	JM

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