



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Spark M. Matsunaga 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	63
# Rooms \geq 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	0.9 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: Spark M. Matsunaga Elementary School
13902 Bromfield 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 Spark M. Matsunaga Elementary School located at 13902 Bromfield 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.

KCI visited the site on December 19, 2022 and deployed seventy-three (73) 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:

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

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

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

Sincerely,



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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Check, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

OC- Quality Control

Table 1- Radon Testing Results		
Spark M. Matsunaga ES		
Test Period: 12/19/2022 - 12/22/2022		
Kit Number	Room / Area	Result
11633307	10	< 0.3
11633322	11	< 0.3
11633344	12	< 0.3
11633351	13	< 0.3
11633352	14	< 0.3
11633353	15	< 0.3
11633321	16	< 0.3
11633330	16	< 0.3
11633359	101	< 0.3
11633360	102	< 0.3
11633341	104	0.6
11633367	104	< 0.3
11633361	105	< 0.3
11633358	106	< 0.3
11633338	107	< 0.3
11633370	108	< 0.3
11633375	109	< 0.3
11633350	110	< 0.3
11633346	111	< 0.3
11633354	111	< 0.3
11633398	111	< 0.3
11633342	112	< 0.3
11633369	112	< 0.3
11633355	115	< 0.3
11633356	115	< 0.3
11633362	116	< 0.3
11633366	118	< 0.3
11633385	120	< 0.3
11633386	159	< 0.3
11633381	160	< 0.3
11633365	161	< 0.3
11633382	162	< 0.3
11633373	164	< 0.3
11633392	165	< 0.3
11633399	100A	0.5
11633400	100B	< 0.3
11633380	100C	< 0.3
11633387	100C	< 0.3
11633388	100D	< 0.3
11633390	100K	< 0.3
11633393	100K	< 0.3
11633394	100K	< 0.3

Table 1- Radon Testing Results		
Spark M. Matsunaga ES		
Test Period: 12/19/2022 - 12/22/2022		
Kit Number	Room / Area	Result
11633363	100L	< 0.3
11633379	100N	< 0.3
11633332	102A	0.6
11633368	102A	< 0.3
11633325	102B	< 0.3
11633331	102B	0.6
11633340	102E	< 0.3
11633339	102F	< 0.3
11633378	102G	< 0.3
11633349	102H	< 0.3
11633383	102H	< 0.3
11633384	102H	< 0.3
11633357	102I	< 0.3
11633376	105A	< 0.3
11633377	111A	< 0.3
11633343	11A	< 0.3
11633345	12A	< 0.3
11633348	133A	< 0.3
11633308	15A	< 0.3
11633371	161C	< 0.3
11633374	APR	< 0.3
11633391	APR	< 0.3
11633315	GYM	< 0.3
11633323	GYM	0.6
11633316	GYM OFFICE	0.9
11633347	KITCHEN OFFICE	< 0.3
11633372	MAIN OFFICE	< 0.3
11633389	MAIN OFFICE	< 0.3
11633317	MEDIA CENTER	< 0.3
11633324	MEDIA CENTER	< 0.3
11633364	WORK ROOM	< 0.3

Table 2- Radon Testing Results			
Spark M. Matsunaga ES			
Test Period: 12/19/22 - 12/22/22			
Kit Number	QC Type	Room / Area	Result
11633321	D	16	< 0.3
11633354	FB	111	< 0.3
11633398	D	111	< 0.3
11633356	D	115	< 0.3
11633387	D	100C	< 0.3
11633393	D	100K	< 0.3
11633394	FB	100K	< 0.3
11633331	D	102b	0.6
11633384	FB	102H	< 0.3
11633349	D	102H	< 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
11633307	010	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633399	100A	2022-12-19 @ 2:00 pm	2022-12-22 @ 10:00 am	0.5 ± 0.5	2022-12-28
11633400	100B	2022-12-19 @ 2:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633387	100C	2022-12-19 @ 2:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633380	100C	2022-12-19 @ 2:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633388	100D	2022-12-19 @ 2:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633394	100K	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633393	100K	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633390	100K	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633363	100L	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633379	100N	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633359	101	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633360	102	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633332	102A	2022-12-19 @ 12:00 pm	2022-12-22 @ 10:00 am	0.6 ± 0.5	2022-12-28
11633368	102A	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633331	102B	2022-12-19 @ 12:00 pm	2022-12-22 @ 10:00 am	0.6 ± 0.5	2022-12-28
11633325	102B	2022-12-19 @ 12:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633340	102E	2022-12-19 @ 12:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633339	102F	2022-12-19 @ 12:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633378	102G	2022-12-19 @ 12:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633349	102H	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633384	102H	2022-12-19 @ 12:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633383	102H	2022-12-19 @ 12:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633357	102I	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633367	104	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633341	104	2022-12-19 @ 12:00 pm	2022-12-22 @ 10:00 am	0.6 ± 0.5	2022-12-28
11633361	105	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633376	105A	2022-12-19 @ 12:00 pm	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633358	106	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633338	107	2022-12-19 @ 12:00 pm	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633370	108	2022-12-19 @ 12:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633375	109	2022-12-19 @ 12:00 pm	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633322	11	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633350	110	2022-12-19 @ 12:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633398	111	2022-12-19 @ 2:00 pm	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633346	111	2022-12-19 @ 12:00 pm	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633354	111	2022-12-19 @ 12:00 pm	2022-12-22 @ 11:00 am	< 0.3	2022-12-28

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11633377	111A	2022-12-19 @ 12:00 pm	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633369	112	2022-12-19 @ 12:00 pm	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633342	112	2022-12-19 @ 12:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633355	115	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633356	115	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633362	116	2022-12-19 @ 12:00 pm	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633366	118	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633343	11A	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633344	12	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633385	120	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633345	12A	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633351	13	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633348	133A	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633352	14	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633353	15	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633386	159	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633308	15A	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633321	16	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633330	16	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11633381	160	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633365	161	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633371	161C	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633382	162	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633373	164	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633392	165	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633391	APR	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633374	APR	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633323	GYM	2022-12-19 @ 12:00 pm	2022-12-22 @ 10:00 am	0.6 ± 0.5	2022-12-28
11633315	GYM	2022-12-19 @ 12:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633316	GYM OFFICE	2022-12-19 @ 12:00 pm	2022-12-22 @ 10:00 am	0.9 ± 0.5	2022-12-28
11633347	KITCHEN OFFICE	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633389	MAIN OFFICE	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633372	MAIN OFFICE	2022-12-19 @ 1:00 pm	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11633324	MEDIA CENTER	2022-12-19 @ 12:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633317	MEDIA CENTER	2022-12-19 @ 12:00 pm	2022-12-22 @ 10:00 am	< 0.3	2022-12-28
11633364	WORK ROOM	2022-12-19 @ 1:00 pm	2022-12-22 @ 10:00 am	< 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 μ R/h Elevation = 820 ft

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

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:
Spark M. Matsunaga Elementary School
13902 Bromfield Rd
Germantown, MD 20874

Date of Test Report:	3/15/2019
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:	1
# of Rooms \geq 4.0 pCi/L:	0
Low Value:	<0.4
High Value:	<0.4

Project Status

Retesting completed: No further action at this time.



March 15, 2019

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

Re: Radon Testing Services

Location: Spark M. Matsunaga Elementary School
13902 Bromfield Rd
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 Spark M. Matsunaga Elementary School located at 13902 Bromfield Rd, 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 or www.epa.gov/radon.

PSI visited the site on February 25, 2019 and deployed one (1) activated charcoal (AC) radon test kit. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on February 28, 2019 to retrieve the radon sampling test kit. A floor plan map of the building with the test location is included as Attachment A of this report.

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

Evaluation of Testing Conditions:

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

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



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

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

Results:

The results of the radon test analysis indicated the following:

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

Notes:
D -Duplicate Sample

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

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

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

ATTACHMENT B

Radon Test Summary Spreadsheet

Radon Testing Results		
Matsunaga Elementary School		
Testing period: 2/25/19 - 2/28/19		
Kit Number	Room / Area	Result (pCi/L)
3923361	18A	<0.4

Table Notes:

D – Duplicate

FB – Field Blank

OB – Office Blank

TB – Transit Blank

QC – Quality Control

ATTACHMENT C

Laboratory Analytical Results

NRPP 105011 AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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

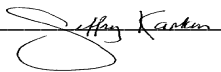
MCPS Radon Survey Spark Matsunaga
13902 Bromfield Road
Germantown MD 20874

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
3220602	3923361	02/25/2019 12:15 pm 02/28/2019 12:15 pm	Main Floor 18A	< 0.4

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

Distributed by: Intertek-PSI (VA)

Date Received: 03/04/2019 Date Logged: 03/04/2019 Date Analyzed: 03/04/2019 Date Reported: 03/05/2019

Report Reviewed By: 

Report Approved By: 

Disclaimer:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

Executive Summary:
Spark M. Matsunaga Elementary School
13902 Bromfield Rd
Germantown, MD 20874

Date of Test Report:	02/13/2019
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:	69
# of Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.4
High Value:	1.2

Project Status

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



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: Spark M. Matsunaga Elementary School
13902 Bromfield Rd
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 Spark M. Matsunaga Elementary School located at 13902 Bromfield Rd, 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 or www.epa.gov/radon.

PSI visited the site on December 4, 2018 and deployed eighty-five (85) 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:

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

Notes:
D -Duplicate Sample

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

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

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



Respectfully Submitted,

INTERTEK-PSI

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

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

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		
Matsunaga Elementary School		
Testing period: 12/4/18 - 12/7/18		
Kit Number	Room / Area	Result (pCi/L)
3926923	10	<0.4
3926924	10A	<0.4
3926830	11	0.4
3926828	12	<0.4
3926827	13	<0.4
3926829	13A	<0.4
3926826	14	0.4
3926825	15	<0.4
3926991	15A	<0.4
3927051	16	<0.4
3927072	17	1.0
3927073	18	<0.4
3927074	18A (MISSING)	--
3927075	19	<0.4
3927076	20	<0.4
3927077	21	<0.4
3927078	21A	0.5
3927079	22	<0.4
3926997	23	0.5
3927080	23A	0.7
3926999	24	0.9
3926998	28	< 0.4
3927012	100	<0.4
3927053	100A	<0.4
3927052	100B	<0.4
3927055	100C	<0.4
3927056	100D	< 0.4
3927058	100F	<0.4
3927059	100G	<0.4
3927013	100H	<0.4
3927054	100I	0.5
3927060	100K	<0.4
3927011	100L	<0.4
3926845	100N	0.4
3927014	100P	0.6
3926822	101	<0.4
3927015	102 (IMC)	0.9
3927016	102 (IMC)	1.2
3927017	102A	1.1
3927088	102B	0.9
3927050	102F	< 0.4
3927081	102G	0.4
3927082	102H	<0.4

Radon Testing Results		
Matsunaga Elementary School		
Testing period: 12/4/18 - 12/7/18		
Kit Number	Room / Area	Result (pCi/L)
3926922	102I	0.4
3927084	104	<0.4
3926842	105	<0.4
3927049	106	< 0.4
3927083	108	0.4
3927087	110	0.5
3927086	112	0.5
3927047	114	0.4
3881210	118 (DPR)	0.5
3927048	120	< 0.4
3927045	124	< 0.4
3888353	126 (APR)	0.4
3888343	126 (APR)	0.5
3927044	126E	0.4
3926821	127	0.8
3927043	130	0.5
3927018	159	< 0.4
3926824	160	0.4
3927020	161	0.4
3926841	162	0.4
3926846	163	<0.4
3926823	164	< 0.4
3926844	165	<0.4
3888414	APR Stage	0.4
3927041	Building Service	< 0.4
3927090	Gym	<0.4
3926843	Gym	<0.4
3926858	Kitchen	<0.4
3926857	Kitchen Office	0.4

Radon Testing Results		
Matsunaga Elementary School		
Testing period: 12/4/18 - 12/7/18		
Kit Number	QC Type	Result (pCi/L)
3927071	17 (D)	0.6
3927000	24 (D)	1.0
3927057	100D (D)	<0.4
3927089	102B (D)	0.8
3918814	102I (D)	0.9
3927085	104 (D)	0.5
3927046	124 (D)	0.6
3927019	159 (D)	<0.4
3927042	Building Service (D)	< 0.4
3928591	Field Blank	<0.4
3928592	Field Blank	< 0.4
3928589	Office Blank	<0.4
3928590	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

NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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


MCPS Radon Survey
Matsunaga ES
Germantown MD 20874


Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
2404853	3927041	12/04/2018	6:50 am	12/07/2018	6:20 am	Floor Main Room Building Service	< 0.4
2404854	3927042	12/04/2018	6:50 am	12/07/2018	6:20 am	Floor Main Room Building Service	< 0.4
2404855	3927043	12/04/2018	6:52 am	12/07/2018	6:22 am	Floor Main Room 130	0.5
2404856	3927044	12/04/2018	6:54 am	12/07/2018	6:23 am	Floor Main Room 126E	0.4
2404857	3927045	12/04/2018	6:58 am	12/07/2018	6:25 am	Floor Main Room 124	< 0.4
2404858	3927046	12/04/2018	6:58 am	12/07/2018	6:25 am	Floor Main Room 124	0.6
2404859	3927047	12/04/2018	7:00 am	12/07/2018	6:26 am	Floor Main Room 114	0.4
2404860	3927049	12/04/2018	7:02 am	12/07/2018	6:27 am	Floor Main Room 106	< 0.4
2404861	3927050	12/04/2018	7:04 am	12/07/2018	6:28 am	Floor Main Room 102F	< 0.4
2404862	3927048	12/04/2018	7:14 am	12/07/2018	6:33 am	Floor Main Room 120	< 0.4
2404863	3927081	12/04/2018	7:16 am	12/07/2018	6:34 am	Floor Main Room 102G	0.4

Comment: AMENDED REPORT 1/30/2019 to include additional results. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018 Date Logged: 12/08/2018 Date Analyzed: 12/10/2018 Date Reported: 01/30/2019

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

Disclaimer:

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NRPP 103216 AL
NRSB ARL0017

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

Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)
2930 Eskridge Road
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MCPS Radon Survey
Matsunaga ES
Germantown MD 20874


Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2404864	3927082	12/04/2018 7:18 am	12/07/2018 6:35 am	Floor Main Room 102H	< 0.4
2404865	3927083	12/04/2018 7:20 am	12/07/2018 6:36 am	Floor Main Room 108	0.4
2404866	3927084	12/04/2018 7:24 am	12/07/2018 6:38 am	Floor Main Room 104	< 0.4
2404867	3927085	12/04/2018 7:24 am	12/07/2018 6:38 am	Floor Main Room 104	0.5
2404868	3927086	12/04/2018 7:26 am	12/07/2018 6:39 am	Floor Main Room 112	0.5
2404869	3927087	12/04/2018 7:28 am	12/07/2018 6:40 am	Floor Main Room 110	0.5
2404870	3927088	12/04/2018 7:32 am	12/07/2018 6:42 am	Floor Main Room 102B	0.9
2404871	3927089	12/04/2018 7:32 am	12/07/2018 6:42 am	Floor Main Room 102B	0.8
2404872	3927090	12/04/2018 7:34 am	12/07/2018 6:43 am	Floor Main Room Gym	< 0.4
2404873	3926843	12/04/2018 7:36 am	12/07/2018 6:44 am	Floor Main Room Gym	< 0.4
2404874	3926822	12/04/2018 7:38 am	12/07/2018 6:45 am	Floor Main Room 101	< 0.4

Comment: AMENDED REPORT 1/30/2019 to include additional results. A copy of this report was emailed to Intertek-PSI (VA).

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NRSB ARL0017

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Charcoal Canister
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Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)
2930 Eskridge Road
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MCPS Radon Survey
Matsunaga ES
Germantown MD 20874


Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2404875	3927012	12/04/2018 7:40 am	12/07/2018 6:46 am	Floor Main Room 100	< 0.4
2404876	3927013	12/04/2018 7:42 am	12/07/2018 6:47 am	Floor Main Room 100H	< 0.4
2404877	3927014	12/04/2018 7:44 am	12/07/2018 6:48 am	Floor Main Room 100P	0.6
2404878	3927015	12/04/2018 7:46 am	12/07/2018 6:49 am	Floor Main Room IMC	0.9
2404879	3927016	12/04/2018 7:48 am	12/07/2018 6:50 am	Floor Main Room IMC	1.2
2404880	3927017	12/04/2018 7:50 am	12/07/2018 6:51 am	Floor Main Room 102A	1.1
2404881	3927018	12/04/2018 7:54 am	12/07/2018 6:53 am	Floor Main Room 159	< 0.4
2404882	3927019	12/04/2018 7:54 am	12/07/2018 6:53 am	Floor Main Room 159	< 0.4
2404883	3927020	12/04/2018 7:56 am	12/07/2018 6:54 am	Floor Main Room 161	0.4
2404884	3918814	12/04/2018 9:24 am	12/07/2018 7:38 am	Floor Main Room 102I	0.9
2404885	3926824	12/04/2018 7:58 am	12/07/2018 6:55 am	Floor Main Room 160	0.4

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NRSB ARL0017

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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


MCPS Radon Survey
Matsunaga ES
Germantown MD 20874


Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2404886	3926841	12/04/2018 8:00 am	12/07/2018 6:56 am	Floor Main Room 162	0.4
2404887	3926846	12/04/2018 8:02 am	12/07/2018 6:57 am	Floor Main Room 163	< 0.4
2404888	3926844	12/04/2018 8:04 am	12/07/2018 6:58 am	Floor Main Room 165	< 0.4
2404889	3926823	12/04/2018 8:06 am	12/07/2018 6:59 am	Floor Main Room 164	< 0.4
2404890	3926842	12/04/2018 8:08 am	12/07/2018 7:00 am	Floor Main Room 105	< 0.4
2404891	3926821	12/04/2018 8:10 am	12/07/2018 7:01 am	Floor Main Room 127	0.8
2404892	3927072	12/04/2018 8:14 am	12/07/2018 7:03 am	Floor Lower Room 17	1.0
2404893	3927071	12/04/2018 8:14 am	12/07/2018 7:03 am	Floor Lower Room 17	0.6
2404894	3927073	12/04/2018 8:16 am	12/07/2018 7:04 am	Floor Lower Room 18	< 0.4
2404895	3927075	12/04/2018 8:20 am	12/07/2018 7:06 am	Floor Lower Room 19	< 0.4
2404896	3927076	12/04/2018 8:22 am	12/07/2018 7:07 am	Floor Lower Room 20	< 0.4

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Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2404897	3927077	12/04/2018 8:24 am	12/07/2018 7:08 am	Floor Lower Room 21	< 0.4
2404898	3927078	12/04/2018 8:26 am	12/07/2018 7:09 am	Floor Lower Room 21A	0.5
2404899	3927079	12/04/2018 8:28 am	12/07/2018 7:10 am	Floor Lower Room 22	< 0.4
2404900	3927080	12/04/2018 8:30 am	12/07/2018 7:11 am	Floor Lower Room 23A	0.7
2404901	3926997	12/04/2018 8:32 am	12/07/2018 7:12 am	Floor Lower Room 23	0.5
2404902	3926998	12/04/2018 8:34 am	12/07/2018 7:13 am	Floor Lower Room 28	< 0.4
2404903	3926999	12/04/2018 8:38 am	12/07/2018 7:15 am	Floor Lower Room 24	0.9
2404904	3927000	12/04/2018 8:38 am	12/07/2018 7:15 am	Floor Lower Room 24	1.0
2404905	3927051	12/04/2018 8:40 am	12/07/2018 7:16 am	Floor Lower Room 16	< 0.4
2404906	3926825	12/04/2018 8:42 am	12/07/2018 7:17 am	Floor Lower Room 15	< 0.4
2404907	3926991	12/04/2018 8:44 am	12/07/2018 7:18 am	Floor Lower Room 15A	< 0.4

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Property Tested: Project # 04481387-1

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MCPS Radon Survey
Matsunaga ES
Germantown MD 20874


Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2404908	3926826	12/04/2018 8:46 am	12/07/2018 7:19 am	Floor Lower Room 14	0.4
2404909	3926827	12/04/2018 8:48 am	12/07/2018 7:20 am	Floor Lower Room 13	< 0.4
2404910	3926828	12/04/2018 8:50 am	12/07/2018 7:21 am	Floor Lower Room 12	< 0.4
2404911	3926829	12/04/2018 8:52 am	12/07/2018 7:22 am	Floor Lower Room 13A	< 0.4
2404912	3926830	12/04/2018 8:54 am	12/07/2018 7:23 am	Floor Lower Room 11	0.4
2404913	3926923	12/04/2018 8:56 am	12/07/2018 7:24 am	Floor Lower Room 10	< 0.4
2404914	3926924	12/04/2018 8:58 am	12/07/2018 7:25 am	Floor Lower Room 10A	< 0.4
2404915	3927052	12/04/2018 9:00 am	12/07/2018 7:26 am	Floor Main Room 100B	< 0.4
2404916	3927053	12/04/2018 9:02 am	12/07/2018 7:27 am	Floor Main Room 100A	< 0.4
2404917	3927054	12/04/2018 9:04 am	12/07/2018 7:28 am	Floor Main Room 100I	0.5
2404918	3927055	12/04/2018 9:06 am	12/07/2018 7:29 am	Floor Main Room 100C	< 0.4

Comment: AMENDED REPORT 1/30/2019 to include additional results. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018 Date Logged: 12/08/2018 Date Analyzed: 12/10/2018 Date Reported: 01/30/2019

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

Disclaimer:

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NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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


MCPS Radon Survey
Matsunaga ES
Germantown MD 20874


Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2404919	3927057	12/04/2018 9:10 am	12/07/2018 7:31 am	Floor Main Room 100D	< 0.4
2404920	3927058	12/04/2018 9:12 am	12/07/2018 7:32 am	Floor Main Room 100F	< 0.4
2404921	3927059	12/04/2018 9:14 am	12/07/2018 7:33 am	Floor Main Room 100G	< 0.4
2404922	3927060	12/04/2018 9:16 am	12/07/2018 7:34 am	Floor Main Room 100K	< 0.4
2404923	3926845	12/04/2018 9:18 am	12/07/2018 7:35 am	Floor Main Room 100N	0.4
2404924	3927011	12/04/2018 9:20 am	12/07/2018 7:36 am	Floor Main Room 100L	< 0.4
2404925	3926922	12/04/2018 9:24 am	12/07/2018 7:38 am	Floor Main Room 102I	0.4
2404926	3926857	12/04/2018 9:26 am	12/07/2018 7:39 am	Floor Main Room Kitchen Office	0.4
2404927	3926858	12/04/2018 9:28 am	12/07/2018 7:40 am	Floor Main Room Kitchen	< 0.4
2404928	3928589	12/04/2018 6:00 am	12/07/2018 6:00 pm	Floor NA Room Office Blank	< 0.4
2404929	3928590	12/04/2018 6:00 am	12/07/2018 6:00 pm	Floor NA Room Transit Blank	< 0.4

Comment: AMENDED REPORT 1/30/2019 to include additional results. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018 Date Logged: 12/08/2018 Date Analyzed: 12/10/2018 Date Reported: 01/30/2019

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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


MCPS Radon Survey
Matsunaga ES
Germantown MD 20874


Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
2404930	3928591	12/04/2018 6:50 am - 12/07/2018 7:40 am	Floor NA Room Field Blank	< 0.4
2404931	3928592	12/04/2018 6:50 am - 12/07/2018 7:40 am	Floor NA Room Field Blank	< 0.4

Comment: AMENDED REPORT 1/30/2019 to include additional results. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018 Date Logged: 12/08/2018 Date Analyzed: 12/10/2018 Date Reported: 01/30/2019

Report Reviewed By: 

Report Approved By: 

Disclaimer:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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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
Matsunaga ES
MD 20874


Log Number	Device Number	Test Exposure Duration:		Area Tested		Result pCi/L
2404850	3888353	12/04/2018 7:08 am	12/07/2018 6:30 am	Floor Main Room APR		0.4
2404851	3888414	12/04/2018 7:10 am	12/07/2018 6:31 am	Floor Main Room APR Stage		0.4
2404852	3881210	12/04/2018 7:12 am	12/07/2018 6:32 am	Floor Main Room DPR		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: Date Analyzed: 12/10/2018 Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

Disclaimer:

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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
Matsunaga ES
MD 20874


Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
2404849	3888343	12/04/2018 7:06 am 12/07/2018 6:29 am	Floor Main Room APR	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: 12/08/2018 Date Analyzed: 12/10/2018 Date Reported: 12/17/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

Disclaimer:

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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:

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Shawn Price, Director of Laboratory Operations, AccuStar Labs

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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 μ 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

**RADON SCREENING SURVEY – FOLLOW-UP SPARK M. MATSUNAGA ELEMENTARY
SCHOOL**

13902 Bromfield Road, Germantown, Maryland 20874

EXECUTIVE SUMMARY

Date of Test Report:	4/15/16 Follow-Up
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	3
# Rooms \geq 4.0 pCi/L:	0
Low Value:	0.5
High Value:	0.8
Confirmed Rooms \geq 4.0 pCi/L US EPA Action Level	0

Summary of Sampling Events \geq 4.0 pCi/L

Room	Result (pCi/L) 2/19/16 Initial	Result (pCi/L) 4/15/16 Follow-Up	Average Result (pCi/L)
111	--- Missing	0.8	0.8
SR23A	--- Missing	0.5	0.5
110	Not sampled	0.8	0.8



MCPS RADON TESTING

Executive Summary: Spark M. Matsunaga Elementary School

Date of Test Report:	4/15/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	3
# Rooms \geq 4.0 pCi/L:	0
Low Value:	0.5
High Value:	0.8

Project Status:

Retesting completed; no further action at this time.



April 15, 2016

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

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

Location: Spark M. Matsunaga Elementary School
13902 Bromfield 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 Spark M. Matsunaga Elementary School, located at 13902 Bromfield 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 or www.epa.gov/radon.

KCI visited the site on March 8, 2016 and deployed three (3) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on March 11, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to AccuStar Labs for analysis by gamma-ray spectroscopy. Accustar Labs is a NRSB certified analytical laboratory for radon analysis (certification # ARL0007) located at 929 Mount

Zion Road, Lebanon, Pennsylvania.

Evaluation of Testing Conditions:

The operating condition that represents the greatest amount of significantly occupied time for this building is; heating active, with outdoor temperature averages $\leq 65^{\circ}$ 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 pCi/L	none	n/a
< 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 (410) 316-7800.

Sincerely,



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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank*

PM- Project Manager

QC- Quality Control

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

Radon Testing Results		
Spark Matsunaga		
Test Period: 03/08/16-03/11/16		
Kit Number	Room / Area	Result
3028809	110	0.8
3028810	111	0.8
3028808	SR23	0.5

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

NRPP 10511AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 12146341

KCI Technologies
936 Ridgebrook Rd
Sparks MD 21152


Spark Matsunga
13902 Bromfield Rd
Germantown MD 20874


Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3016753	3028808	03/08/2016 3:32 pm	03/11/2016 12:36 pm	Unit SR23A Basement	0.5
3016754	3028809	03/08/2016 3:47 pm	03/11/2016 12:38 pm	Unit 110 Basement Flex	0.8
3016755	3028810	03/08/2016	03/11/2016 1	111	0.8

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

Distributed by: KCI Technologies, Inc.

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

Report Reviewed By: 

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

Disclaimer:

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Send Written Report To:

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

Site Tested:

Site Name Spark Matsunaga
Address
Address
City / Town
State/Province Postal Code MD
Test Country Montgomery County
Project Number 12146341

Contact Information:

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

Lab Use Only	Device Number	Building Number	Unit Number	Floor	Name of Room	Start Date mm/dd/yyyy	Start Time hh:mm am / pm	Stop Date mm/dd/yyyy	Stop Time hh:mm am / pm	Lab Use Only
	3028808		SR23 A	0	Temp	03/08/2016	15:32	03/11/2016	12:36	
	3028809		110	0	Flex	03/08/2016	15:47	03/11/2016	12:38	
	3028810			0		03/08/2016	16:14	03/11/2016	12:39	

NRPP 10511AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 12146341

KCI Technologies
936 Ridgebrook Rd
Sparks MD 21152

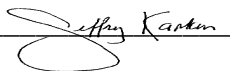
MCPS Radon Phase 11 Office Blank

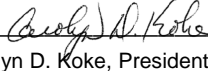
Log Number	Device Number	Test Exposure Duration:	Area Tested	Result (pCi/L)
3016739	3029191	03/08/2016 10:00 am 03/11/2016 10:00 am	Office Blank	<0.4

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

Distributed by: KCI Technologies, Inc.

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

Report Reviewed By: 

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

Disclaimer:

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Radon Device Type Open Face Canister

Send Written Report To:

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

Site Tested:

Site Name	MCPs Office Blank
Address	936 Ridgebrook Rd
Address	
City / Town	Sparks
State/Province	Postal Code MD 21152
Test Country	Montgomery County
Project Number	12146341

Contact Information:

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

Lab Use Only	Device Number	Building Number	Unit Number	Floor	Name of Room	Start Date mm/dd/yyyy	Start Time hh:mm am / pm	Stop Date mm/dd/yyyy	Stop Time hh:mm am / pm	Lab Use Only
	3029191	1	1	1	Office Blank	03/08/2016	10:00 am	03/11/2016	10:00 am	

NRPP 10511AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested:

KCI Technologies
936 Ridgebrook Rd
Sparks MD 21152

MCPS
Transit Blanks

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

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

Distributed by: KCI Technologies, Inc.

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

Report Reviewed By: Christie Bates

Report Approved By: Carolyn D. Koke

Carolyn D. Koke, President, AccuStar Labs

Disclaimer:

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

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

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

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

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

Test Site Info

Name of Building/Project or Owner: Transit County: _____
 Site Address: Transit State: _____ Zip: _____
 City: _____ Email: _____

Projects Contact Name: Don Coale Phone: _____

Detector Serial#	ROOM NAME & NUMBER - LOCATION OF DETECTOR IN ROOM (indicate duplicates and blanks)	Floor	Start Date	Start Time Include AM/PM	Stop Date	Stop Time Include AM/PM
3028953	Transit	1	1/19/16	approx: 00pm 1/23/16		9:30am
8955	Transit	1	1/19/16	↓	↓	↓
8954	Transit	1	1/19/16	↓	↓	↓
8997	Transit	1	1/19/16	↓	↓	↓

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

Multi-Page Report Y-N
LAB USE ONLY

Wgt. Gain	pCi/L
	<0.4
	<0.4
	<0.4
	<0.4

1/27/2016

KCI Technologies, Inc.

3010588 3028953 ACPC275B EXP12/31/2018

Structure Type: (circle one or more) Basement - Crawlspace - Slab on Grade - Other

Test Purpose: (Circle all that apply) Initial Screening - Follow Up Test -

Building Type: (Circle One) Residential - Non Residential

Private Day Care - Private School

Day Care in Public School - Public School

Send Results To:

Company Name: KCI Tech

Address: 936 Ridgebrook

City: Sparks

Phone: 410-599-3826

EMAIL Results to: James.Mouldale@kci.com

State: MD

Zip: 21152

Fax:

Canisters retrieved by _____ # _____

Owner waives confidentiality by signing here _____ Date 1/27/16

Attention: James Mouldale

Were general operating conditions maintained?	Yes - No	explain if NO
Were closed building conditions maintained?	Yes - No	explain if NO
Normal Temp.	Yes - No	
Normal Humidity	Yes - No	
Windy Y-N	Rainy Y-N	

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

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

NEHA 10511AL NRSB ARL 0007

Revision 5
 4/2015

TCS INDUSTRIES, INC.

(717) 657-7032

RADON GAS DETECTION

www.radondetek.com

4326 Crestview Road, Harrisburg, PA 17112

James Mouldale
KCI
936 Ridgebrook Rd.
Sparks, MD 21152

April 04, 2016

Dear Mr. Mouldale:

The spike exposure data were:

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

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

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

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

Sincerely,



Carl H. Distenfeld, CHP

TCS Radon Chamber NRSB CHM 0002

NRPP 10511AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested:

KCI Technologies
936 Ridgebrook Rd
Sparks MD 21152

MCPS
Radon Spike Sample Laboratory Results


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

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

Distributed by: KCI Technologies, Inc.

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

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

Report Reviewed By: 

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

Disclaimer:

The uncertainty of this radon measurement is +/- 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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Send Written Report To:

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

Site Tested:

Site Name	MCPs	
Address	850 Hagerford Dr	
Address		
City / Town	Rockville	
State/Province	Postal Code	20850
Test Country	Montgomery County	
Project Number	12146341	

Contact Information:

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

Lab Use Only	Device Number	Building Number	Unit Number	Floor	Name of Room	Temp	Start Date mm/dd/yyyy	Start Time hh:mm am / pm	Stop Date mm/dd/yyyy	Stop Time hh:mm am / pm	Lab Use Only
	3029166	1		1	1		4/4/16	11:10am	4/6/16	11:15am	
	3029214	1		1	2						
	3029217	1		1	3						
	3029218	1		1	4						
	3029219	1		1	5						
	3029220	1		1	6						



MCPS RADON TESTING

Executive Summary: Spark M. Matsunaga Elementary School

Date of Test Report:	2/19/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	72
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	1.3

Project Status:

Initial testing completed; missing or compromised samples need re-test.



February 19, 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 # 12146341.25

Location: Spark M. Matsunaga Elementary School
13902 Bromfield 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 Spark M. Matsunaga Elementary School, located at 13902 Bromfield 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 or www.epa.gov/radon.

KCI visited the site on January 19, 2016 and deployed ninety-two (92) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on January 22, 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 pCi/L	none	n/a
< 4.0 pCi/L	See Attachment B	

Notes:
D- Duplicate sample

The 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

Radon Testing Results		
Spark Matsunaga Elementary School		
Test Period: 01/19/16-01/22/16		
Kit Number	Room / Area	Result
7718944	10	< 0.3
7718922	11	< 0.3
7718921	12	< 0.3
7717810	13	< 0.3
7718923	14	< 0.3
7718924	15	< 0.3
7718902	16	< 0.3
7718925	100	< 0.3
7718927	100	< 0.3
7718909	101	1.3
7718933	101	< 0.3
7718934	101	< 0.3
7717887	102	1
7717889	102	1.1
7718916	102	< 0.3
7718906	103	< 0.3
7717888	104	0.8
7718910	105	< 0.3
7718915	106	< 0.3
7717895	107	< 0.3
7718907	108	0.8
7717897	109	< 0.3
7717802	112	0.9
7718938	113	< 0.3
7718945	114	< 0.3
7718914	115	< 0.3
7717847	116	< 0.3
7718913	118	0.6
7718928	119	0.5
7718917	120	< 0.3
7718904	123	0.6
7718919	126	< 0.3
7718930	126	0.7
7718912	130	0.7
7717808	159	< 0.3
7717804	160	0.6
7721633	161	0.6
7721647	162	< 0.3
7721649	163	< 0.3
7721651	164	0.7
7721670	165	0.8
7717801	011A	< 0.3
7717809	013A	< 0.3
7718926	100A	< 0.3
7718935	100B	0.6
7718942	100C	< 0.3

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Spark Matsunaga Elementary School		
Test Period: 01/19/16-01/22/16		
Kit Number	Room / Area	Result
7718943	100D	< 0.3
7718929	100F	< 0.3
7718936	100G	< 0.3
7718941	100H	< 0.3
7717882	100K	0.6
7717811	100L	< 0.3
7717881	100N	< 0.3
7718931	101 OFFICE	0.8
7717890	102A	1
7718911	102B	1
7718901	102G	< 0.3
7717885	102I	0.7
7717898	* 111 (missing)	0
7718918	126F	< 0.3
7718947	132A	< 0.3
7722560	ML862	< 0.3
7721677	ML863	< 0.3
7721645	ML864	< 0.3
7721661	ML866	< 0.3
7722574	ML868	< 0.3
7721643	ML869	< 0.3
7722557	ML870	< 0.3
7722561	ML871	< 0.3
7721652	ML873	< 0.3
7721657	ML874	< 0.3
7721630	ML875	< 0.3
7721675	ML876	< 0.3
7721666	ML877	< 0.3
7721650	ML898	< 0.3
7717899	SR127A	< 0.3
7717900	SR127A	< 0.3
7717894	SR18A	< 0.3
7718908	* SR23A (missing)	0

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Spark Matsunaga Elementary School		
Test Period: 01/19/16-01/22/16		
Kit Number	QC Type	Result
7718937	D (101)	< 0.3
7717891	D (102A)	0.8
7718905	D (106)	< 0.3
7718932	D (109)	< 0.3
7718903	D (118)	0.5
7718939	D (118)	< 0.3
7718946	D (132A)	< 0.3
7722585	D (ML863)	< 0.3
7717892	FB (102A)	< 0.3
7717896	FB (104)	< 0.3
7718920	FB (132A)	< 0.3
7722559	FB (ML876)	< 0.3
7721441	OB (0)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

February 11, 2016 **LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**SPARK MATSUNAGA ELEMENTARY SCHOOL
 MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7717801	011A	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7717809	013A	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7718944	10	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7718925	100	2016-01-19 @ 11:00 am	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718927	100	2016-01-19 @ 11:00 am	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718926	100A	2016-01-19 @ 11:00 am	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718935	100B	2016-01-19 @ 11:00 am	2016-01-22 @ 10:00 am	0.6 ± 0.3	2016-01-26
7718942	100C	2016-01-19 @ 11:00 am	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718943	100D	2016-01-19 @ 11:00 am	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718929	100F	2016-01-19 @ 11:00 am	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718936	100G	2016-01-19 @ 11:00 am	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718941	100H	2016-01-19 @ 11:00 am	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7717882	100K	2016-01-19 @ 1:00 pm	2016-01-22 @ 10:00 am	0.6 ± 0.3	2016-01-27
7717811	100L	2016-01-19 @ 1:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7717881	100N	2016-01-19 @ 1:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718933	101	2016-01-19 @ 11:00 am	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718934	101	2016-01-19 @ 11:00 am	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718937	101	2016-01-19 @ 11:00 am	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718909	101	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	1.3 ± 0.4	2016-01-27
7718931	101 OFFICE	2016-01-19 @ 11:00 am	2016-01-22 @ 10:00 am	0.8 ± 0.3	2016-01-26
7718916	102	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7717887	102	2016-01-19 @ 12:00 pm	2016-01-22 @ 10:00 am	1.0 ± 0.3	2016-01-26
7717889	102	2016-01-19 @ 12:00 pm	2016-01-22 @ 10:00 am	1.1 ± 0.3	2016-01-26
7717891	102A	2016-01-19 @ 1:00 pm	2016-01-22 @ 10:00 am	0.8 ± 0.3	2016-01-26
7717892	102A	2016-01-19 @ 1:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7717890	102A	2016-01-19 @ 1:00 pm	2016-01-22 @ 10:00 am	1.0 ± 0.4	2016-01-27
7718911	102B	2016-01-19 @ 11:00 am	2016-01-22 @ 12:00 pm	1.0 ± 0.3	2016-01-26
7718901	102G	2016-01-19 @ 12:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7717885	102I	2016-01-19 @ 1:00 pm	2016-01-22 @ 10:00 am	0.7 ± 0.3	2016-01-26
7718906	103	2016-01-19 @ 11:00 am	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7717888	104	2016-01-19 @ 12:00 pm	2016-01-22 @ 9:00 am	0.8 ± 0.3	2016-01-27
7717896	104	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7718910	105	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7718905	106	2016-01-19 @ 12:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7718915	106	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7717895	107	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7718907	108	2016-01-19 @ 12:00 pm	2016-01-22 @ 9:00 am	0.8 ± 0.3	2016-01-27

February 11, 2016 **LABORATORY ANALYSIS REPORT** **

Radon test result report for:
**SPARK MATSUNAGA ELEMENTARY SCHOOL
 MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7718932	109	2016-01-19 @ 11:00 am	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7717897	109	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7718922	11	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7717898	111	@	@		
7717802	112	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	0.9 ± 0.3	2016-01-27
7718938	113	2016-01-19 @ 11:00 am	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7718945	114	2016-01-19 @ 11:00 am	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7718914	115	2016-01-19 @ 11:00 am	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7717847	116	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7718903	118	2016-01-19 @ 12:00 pm	2016-01-22 @ 9:00 am	0.5 ± 0.3	2016-01-26
7718913	118	2016-01-19 @ 12:00 pm	2016-01-22 @ 9:00 am	0.6 ± 0.3	2016-01-26
7718939	118	2016-01-19 @ 12:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7718928	119	2016-01-19 @ 12:00 pm	2016-01-22 @ 9:00 am	0.5 ± 0.3	2016-01-26
7718921	12	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7718917	120	2016-01-19 @ 11:00 am	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7718904	123	2016-01-19 @ 12:00 pm	2016-01-22 @ 10:00 am	0.6 ± 0.3	2016-01-27
7718919	126	2016-01-19 @ 12:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718930	126	2016-01-19 @ 12:00 pm	2016-01-22 @ 10:00 am	0.7 ± 0.3	2016-01-26
7718918	126F	2016-01-19 @ 12:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7717810	13	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7718912	130	2016-01-19 @ 12:00 pm	2016-01-22 @ 10:00 am	0.7 ± 0.3	2016-01-27
7718946	132A	2016-01-19 @ 12:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718920	132A	2016-01-19 @ 12:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718947	132A	2016-01-19 @ 12:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718948	133A	2016-01-19 @ 12:00 pm	2016-01-22 @ 4:00 pm	???? EI	2016-02-08
7718923	14	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7718924	15	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7717808	159	2016-01-19 @ 1:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718902	16	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7717804	160	2016-01-19 @ 1:00 pm	2016-01-22 @ 11:00 am	0.6 ± 0.3	2016-01-27
7721633	161	2016-01-19 @ 1:00 pm	2016-01-22 @ 11:00 am	0.6 ± 0.3	2016-01-26
7721647	162	2016-01-19 @ 1:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7721649	163	2016-01-19 @ 1:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7721651	164	2016-01-19 @ 1:00 pm	2016-01-22 @ 11:00 am	0.7 ± 0.3	2016-01-26
7721670	165	2016-01-19 @ 1:00 pm	2016-01-22 @ 11:00 am	0.8 ± 0.3	2016-01-26
7717900	SR127A	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7717899	SR127A	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26

February 11, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**SPARK MATSUNAGA ELEMENTARY SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7717894	SR18A	2016-01-19 @ 12:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7718908	SR23A	@	@		

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February 11, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**SPARK MATSUNAGA ELEMENTARY SCHOOL
OFFICE BLANK**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7721441	0	2016-01-19 @ 3:00 pm	2016-01-22 @ 1:00 pm	< 0.3	2016-01-26

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February 11, 2016
**LABORATORY ANALYSIS
REPORT ****

Radon test result report for:
**SPARK MATSUNAGA ELEMENTARY SCHOOL
PORTABLE**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7722560	ML862	2016-01-19 @ 2:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7721677	ML863	2016-01-19 @ 2:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7722585	ML863	2016-01-19 @ 2:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7721645	ML864	2016-01-19 @ 2:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7721661	ML866	2016-01-19 @ 2:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7722574	ML868	2016-01-19 @ 2:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7721643	ML869	2016-01-19 @ 2:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7722557	ML870	2016-01-19 @ 2:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7722561	ML871	2016-01-19 @ 2:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7721652	ML873	2016-01-19 @ 2:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7721655	ML873	2016-01-19 @ 2:00 pm	2016-01-22 @ 4:00 pm	???? EI	2016-02-09
7721657	ML874	2016-01-19 @ 2:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7721630	ML875	2016-01-19 @ 2:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7721675	ML876	2016-01-19 @ 2:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7722559	ML876	2016-01-19 @ 2:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7721666	ML877	2016-01-19 @ 2:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7721650	ML898	2016-01-19 @ 2:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26

February 2, 2016
LABORATORY ANALYSIS REPORT

Radon test result report for:
MCPS PHASE 5 & 6 TRANSIT BLANKS

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7722194	1	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718494	10	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718475	11	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718495	12	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718496	13	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718497	14	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718498	15	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718499	16	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718500	17	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718296	18	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718295	19	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722195	2	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716789	20	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716785	21	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-26
7716791	22	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716786	23	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716793	24	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718274	25	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716792	26	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718294	27	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718293	28	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718292	29	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722197	3	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718290	30	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722198	4	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722199	5	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722211	6	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718491	7	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718476	8	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-26
7718479	9	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27

February
15,
2016

**** LABORATORY ANALYSIS
REPORT ****

Spike Sample Laboratory Results

Radon test result report for:
MCPS

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

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCF Technologies Inc. Job Number 173704

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

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

Time Start: 0926 Time Stop: 0926 Time Start: _____ Time Stop: _____

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

7718281, 7718282, 7718291, _____

7718288, 7718289, 7718273 _____

ε3 Left

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____

Device No.'s: _____ Device No.'s: _____

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____

Device No.'s: _____ Device No.'s: _____

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



Chain of Custody

Project Name: MCPS Radon Phase VI

Name of Schools:

- | | | |
|--------------------------|------------------------------|---------------------------|
| 1. Francis Scott Key MS | 12. Little Bennett ES | 23. Rolling Terrace ES |
| 2. Gaithersburg ES | 13. Loiderman MS | 24. Roscoe Nix ES |
| 3. Gaithersburg MS | 14. Longview ES | 25. Sally K. Ride ES |
| 4. Galway ES | 15. Meadow Hall ES | 26. Spark Matsunaga ES |
| 5. Great Seneca Creek ES | 16. Neelsville MS | 27. Tacoma Park ES |
| 6. Harmony Hills ES | 17. New Hampshire Estates ES | 28. Thomas Pyle MS |
| 7. John Poole MS | 18. North Bethesda MS | 29. Wayside ES |
| 8. Judith A. Resnik ES | 19. Northwest HS | 30. Westbrook ES (retest) |
| 9. Kemp Mill ES | 20. Pine Crest ES | 31. Westland MS (retest) |
| 10. Kingsview MS | 21. Radnor Center | 32. William B. Gibbs ES |
| 11. Lakelands Park MS | 22. Ritchie Park ES | 33. William Tyler Page ES |

	Date	Initials
Radon Test Kits Deployed	1/19/16	JM
Radon Test Kits Sampled	1/22/16	JM
Radon Test Kits Shipped to Lab*	1/22/16	JM
Radon Test Kits Received by Lab*	1/26/16	JM

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