



Date: 11/20/19

Performed by: Andrew Tinklenberg

Location: Bethune School

RE: Radon Testing

INTRODUCTION

From November 5 – 8, 2019, radon testing was performed within Bethune School. The testing was performed in frequently-occupied ground contact rooms and rooms immediately above unoccupied spaces (crawl spaces, tunnels, etc.) that are in contact with the ground per the Environmental Protection Agency (EPA) and Minnesota Department of Health (MDH) guidelines.

SUMMARY OF FINDINGS

Office 113B (Health Office) and Office 165 were found to have radon gas levels above 4.0 picocuries per liter of air (pCi/L). When radon is detected above this level, the EPA and MDH recommend follow-up testing in the area. From November 13 – 15 and November 18 – 20, 2019, follow-up testing was performed in the areas using a continuous radon monitor (CRM). CRMs are recommended for follow-up testing because they give hour-by-hour results instead of just an overall average of the radon concentration during the test period. This can be helpful in assuring that radon gas concentrations in an area are below 4.0 pCi/L during occupied times. The CRM results proved this to be true as the average radon gas concentration for the CRM follow-up testing during the two office's potentially occupied hours which are from approximately 8:00 AM – 4:00 PM, Monday – Friday, was 3.7 pCi/L (overall) and 2.4 pCi/L (occupied) for Office 113B, and 1.4 pCi/L (overall) and 0.9 pCi/L (occupied) for Office 165.

All other areas that were tested were found to have radon gas levels below 4.0 pCi/L. (Note: Rooms B & BB were the blank samples.)

Please refer to the attached AirChek radon testing report, CRM testing results, and sample diagram for further information concerning the radon testing, areas that were tested, and the radon levels that were found to be present. Per MDH requirements, this information will be shared with the local regulatory agency (MDH) and will be maintained on file by EH&S.

If you have any questions regarding this information, please feel free to contact me. Thank you,

Andrew Tinklenberg
Safety Specialist, Environmental Health & Safety
Minneapolis Public Schools
Environmental Health & Safety - Facilities Dept.
andrew.tinklenberg@mpls.k12.mn.us
612-668-0306 Phone
612-668-0310 EH & S General Office
612-668-0275 Fax



I5554 / ANDREW TINKLENBERG

Kit Number	Start Date	Start Time	End Date	End Time	Temp.	Facility	Building	Room	Project ID	Floor	Result
9259229	2019-11-05	8:00 am	2019-11-08	8:00 am	68	MPS	BETHUNE	HEALTH OFFICE 113B	BETHUNE	1	6.3
9259233	2019-11-05	8:00 am	2019-11-08	8:00 am	68	MPS	BETHUNE	OFFICE 114B	BETHUNE	1	1.8
9259218	2019-11-05	8:00 am	2019-11-08	7:00 am	67	MPS	BETHUNE	CLASS 105	BETHUNE	1	2.1
9259222	2019-11-05	8:00 am	2019-11-08	7:00 am	67	MPS	BETHUNE	CLASS 108	BETHUNE	1	1.8
9259212	2019-11-05	7:00 am	2019-11-08	7:00 am	70	MPS	BETHUNE	MEDIA 121	BETHUNE	1	0.8
9259232	2019-11-05	8:00 am	2019-11-08	8:00 am	68	MPS	BETHUNE	OFFICE 114A	BETHUNE	1	1.7
9259210	2019-11-05	7:00 am	2019-11-08	7:00 am	67	MPS	BETHUNE	LIBRARY 125	BETHUNE	1	2.1
9259215	2019-11-05	8:00 am	2019-11-08	7:00 am	66	MPS	BETHUNE	CLASS 102	BETHUNE	1	2.6
9259235	2019-11-05	8:00 am	2019-11-08	8:00 am	67	MPS	BETHUNE	OFFICE 117A	BETHUNE	1	1.4
9259238	2019-11-05	9:00 am	2019-11-08	8:00 am	68	MPS	BETHUNE	CLASS 118	BETHUNE	1	1.0
9259241	2019-11-05	11:00 am	2019-11-08	8:00 am	68	MPS	BETHUNE	OFFICE 127B	BETHUNE	1	3.3
9259217	2019-11-05	8:00 am	2019-11-08	7:00 am	67	MPS	BETHUNE	CLASS 104	BETHUNE	1	1.8
9259208	2019-11-05	7:00 am	2019-11-08	7:00 am	69	MPS	BETHUNE	CAFETERIA 124	BETHUNE	1	2.1
9259219	2019-11-05	8:00 am	2019-11-08	7:00 am	66	MPS	BETHUNE	CLASS 106	BETHUNE	1	3.5
9259228	2019-11-05	8:00 am	2019-11-08	7:00 am	68	MPS	BETHUNE	OFFICE 113	BETHUNE	1	2.7
9259239	2019-11-05	9:00 am	2019-11-08	8:00 am	68	MPS	BETHUNE	ROOM B	BETHUNE	1	<0.3
9259225	2019-11-05	8:00 am	2019-11-08	7:00 am	67	MPS	BETHUNE	CLASS 111	BETHUNE	1	1.6
9259223	2019-11-05	8:00 am	2019-11-08	7:00 am	67	MPS	BETHUNE	CLASS 109	BETHUNE	1	2.2
9259213	2019-11-05	7:00 am	2019-11-08	7:00 am	70	MPS	BETHUNE	OFFICE 151	BETHUNE	1	1.0
9259211	2019-11-05	7:00 am	2019-11-08	7:00 am	70	MPS	BETHUNE	OFFICE 165	BETHUNE	1	4.7
9259230	2019-11-05	8:00 am	2019-11-08	8:00 am	68	MPS	BETHUNE	OFFICE 114G	BETHUNE	1	2.5
9259236	2019-11-05	8:00 am	2019-11-08	8:00 am	67	MPS	BETHUNE	OFFICE 117B	BETHUNE	1	2.2
9259234	2019-11-05	8:00 am	2019-11-08	8:00 am	67	MPS	BETHUNE	RESOURCE 116	BETHUNE	1	1.6
9259237	2019-11-05	8:00 am	2019-11-08	8:00 am	67	MPS	BETHUNE	CLASS 117	BETHUNE	1	2.0
9259221	2019-11-05	8:00 am	2019-11-08	7:00 am	67	MPS	BETHUNE	CLASS 107	BETHUNE	1	1.7
9259216	2019-11-05	8:00 am	2019-11-08	7:00 am	66	MPS	BETHUNE	CLASS 103	BETHUNE	1	2.3
9259231	2019-11-05	8:00 am	2019-11-08	8:00 am	68	MPS	BETHUNE	OFFICE 114E	BETHUNE	1	2.2
9259209	2019-11-05	7:00 am	2019-11-08	7:00 am	69	MPS	BETHUNE	GYM 100	BETHUNE	1	1.6
9259226	2019-11-05	8:00 am	2019-11-08	7:00 am	68	MPS	BETHUNE	CLASS 112	BETHUNE	1	1.6
9259227	2019-11-05	8:00 am	2019-11-08	7:00 am	68	MPS	BETHUNE	OFFICE 112A	BETHUNE	1	1.3
9259240	2019-11-05	9:00 am	2019-11-08	8:00 am	70	MPS	BETHUNE	ROOM BB	BETHUNE	1	<0.3
9259220	2019-11-05	8:00 am	2019-11-08	7:00 am	67	MPS	BETHUNE	BEHAVIOR 105C	BETHUNE	1	2.2
9259224	2019-11-05	8:00 am	2019-11-08	7:00 am	67	MPS	BETHUNE	CLASS 110	BETHUNE	1	2.2
9259214	2019-11-05	8:00 am	2019-11-08	7:00 am	66	MPS	BETHUNE	CLASS 101	BETHUNE	1	2.9



Radon Inspection Report

Test Location:

Bethune School - Health Office 113B
919 Emerson Ave. N. Minneapolis,
MN 55411

Test For:

Inspected By:

1225 N. 7th Street
Minneapolis, MN 55411
612-668-0310

Test Result: Pass

Overall Average:

3.7 pCi/l

Test Device Details:

Serial Number: 246216011
Model Number: 1030
Last Calibration: 09/11/2019
Next Calibration: 09/11/2020
Cal-Factors: 2.61,2.70,2.57,2.68,2.71,2.62
Motion Error: Yes

Test Site Condition:

Test Summary:

<u>CRM Location:</u>	<u>Start:</u> 11/13/2019 10:46 AM	<u>Stop:</u> 11/15/2019 10:46 AM	<u>Interval:</u> 1 hr	<u>Duration:</u> 48 hr
	<u>Min:</u>	<u>Max:</u>	<u>Average:</u>	<u>Measurement Units:</u>
Radon Concentration:	0.2	8.2	3.7	pCi/l
Temperature	58.5	72.7	64.5	F
Humidity	15	26	20	%
Pressure	29.26	29.69	29.52	inHg

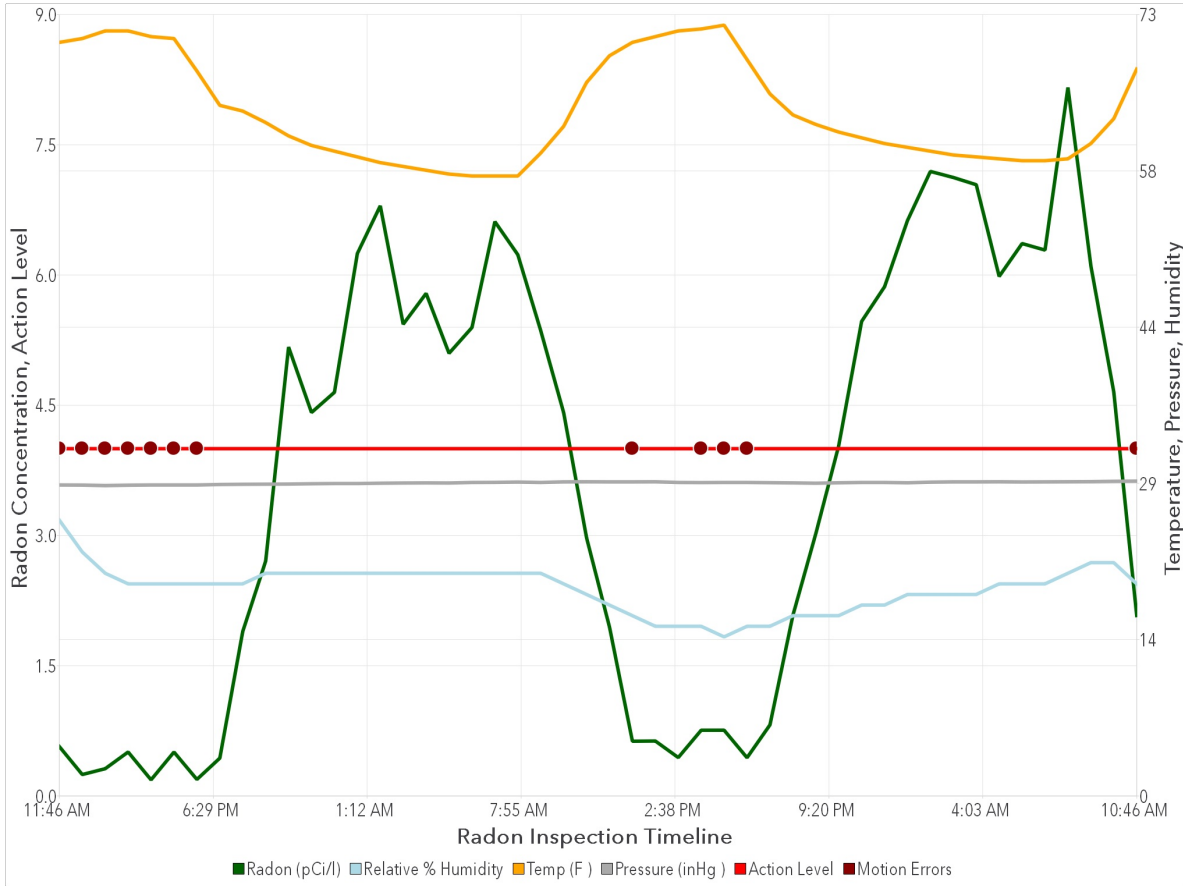
Comments:

Lic/Cert Signature

Inspection Report Date: 11/15/2019



Radon Inspection Chart



Test Result: Pass

Test Location: 919 Emerson Ave. N. Minneapolis, MN 55411

Inspection Report Date: 11/15/2019



Test Table

Date/Time	Radon(pCi/l)	Temp(F)	Pres(inHg)	Humidity(%)	Flags
11/13/19 11:46 AM	0.6	71.1	29.32	26	M
11/13/19 12:46 PM	0.2	71.4	29.31	23	M
11/13/19 01:46 PM	0.3	72.1	29.26	21	M
11/13/19 02:46 PM	0.5	72.1	29.30	20	M
11/13/19 03:46 PM	0.2	71.6	29.32	20	M
11/13/19 04:46 PM	0.5	71.4	29.32	20	M
11/13/19 05:46 PM	0.2	68.4	29.32	20	M
11/13/19 06:46 PM	0.4	65.1	29.37	20	-
11/13/19 07:46 PM	1.9	64.6	29.39	20	-
11/13/19 08:46 PM	2.7	63.5	29.40	21	-
11/13/19 09:46 PM	5.2	62.2	29.41	21	-
11/13/19 10:46 PM	4.4	61.3	29.44	21	-
11/13/19 11:46 PM	4.6	60.8	29.46	21	-
11/14/19 12:46 AM	6.2	60.3	29.46	21	-
11/14/19 01:46 AM	6.8	59.7	29.49	21	-
11/14/19 02:46 AM	5.4	59.4	29.51	21	-
11/14/19 03:46 AM	5.8	59.0	29.52	21	-
11/14/19 04:46 AM	5.1	58.6	29.51	21	-
11/14/19 05:46 AM	5.4	58.5	29.56	21	-
11/14/19 06:46 AM	6.6	58.5	29.57	21	-
11/14/19 07:46 AM	6.2	58.5	29.60	21	-
11/14/19 08:46 AM	5.4	60.6	29.56	21	-
11/14/19 09:46 AM	4.4	63.1	29.62	20	-
11/14/19 10:46 AM	3.0	67.3	29.63	19	-
11/14/19 11:46 AM	1.9	69.8	29.62	18	-
11/14/19 12:46 PM	0.6	71.1	29.62	17	M
11/14/19 01:46 PM	0.6	71.6	29.63	16	-
11/14/19 02:46 PM	0.4	72.1	29.56	16	-
11/14/19 03:46 PM	0.8	72.3	29.55	16	M
11/14/19 04:46 PM	0.8	72.7	29.56	15	M
11/14/19 05:46 PM	0.4	69.4	29.56	16	M
11/14/19 06:46 PM	0.8	66.2	29.54	16	-
11/14/19 07:46 PM	2.1	64.2	29.52	17	-
11/14/19 08:46 PM	3.0	63.3	29.49	17	-
11/14/19 09:46 PM	4.0	62.6	29.53	17	-
11/14/19 10:46 PM	5.5	62.1	29.56	18	-
11/14/19 11:46 PM	5.9	61.5	29.56	18	-
11/15/19 12:46 AM	6.6	61.2	29.53	19	-
11/15/19 01:46 AM	7.2	60.8	29.59	19	-
11/15/19 02:46 AM	7.1	60.4	29.62	19	-
11/15/19 03:46 AM	7.0	60.3	29.62	19	-
11/15/19 04:46 AM	6.0	60.1	29.63	20	-
11/15/19 05:46 AM	6.4	59.9	29.61	20	-
11/15/19 06:46 AM	6.3	59.9	29.62	20	-

Test Result: Pass

Test Location: 919 Emerson Ave. N. Minneapolis, MN 55411

Inspection Report Date: 11/15/2019



Test Table

Date/Time	Radon(pCi/l)	Temp(F)	Pres(inHg)	Humidity(%)	Flags
11/15/19 07:46 AM	8.2	60.1	29.63	21	-
11/15/19 08:46 AM	6.1	61.5	29.64	22	-
11/15/19 09:46 AM	4.7	63.9	29.67	22	-
11/15/19 10:46 AM	2.1	68.5	29.69	20	M

Test Result: Pass

Test Location: 919 Emerson Ave. N. Minneapolis, MN 55411

Inspection Report Date: 11/15/2019

Radon Test Information

Minnesota Notice to Clients

For more information on radon, please contact the Minnesota Department of Health at 651-201-4601 or health.indoorair@state.mn.us or visit their website at <http://www.health.state.mn.us/divs/eh/indoorair/radon/index.html>.

Test Result: Pass

Test Location: 919 Emerson Ave. N. Minneapolis, MN 55411

Inspection Report Date: 11/15/2019



Radon Inspection Report

Test Location:

Bethune School - Office 165
919 Emerson Ave. N.
Minneapolis, MN 55411

Test For:

Inspected By:

1225 N. 7th Street
Minneapolis, MN 55411
612-668-0310

Test Result: Pass

Overall Average:

1.4 pCi/l

Test Device Details:

Serial Number: 246216011
Model Number: 1030
Last Calibration: 09/11/2019
Next Calibration: 09/11/2020
Cal-Factors: 2.61,2.70,2.57,2.68,2.71,2.62
Motion Error: Yes

Test Site Condition:

Test Summary:

<u>CRM Location:</u>	<u>Start:</u> 11/18/2019 09:52 AM	<u>Stop:</u> 11/20/2019 09:52 AM	<u>Interval:</u> 1 hr	<u>Duration:</u> 48 hr
	<u>Min:</u>	<u>Max:</u>	<u>Average:</u>	<u>Measurement Units:</u>
Radon Concentration:	0.0	4.3	1.4	pCi/l
Temperature	66.0	71.4	68.4	F
Humidity	23	28	26	%
Pressure	29.04	29.43	29.20	inHg

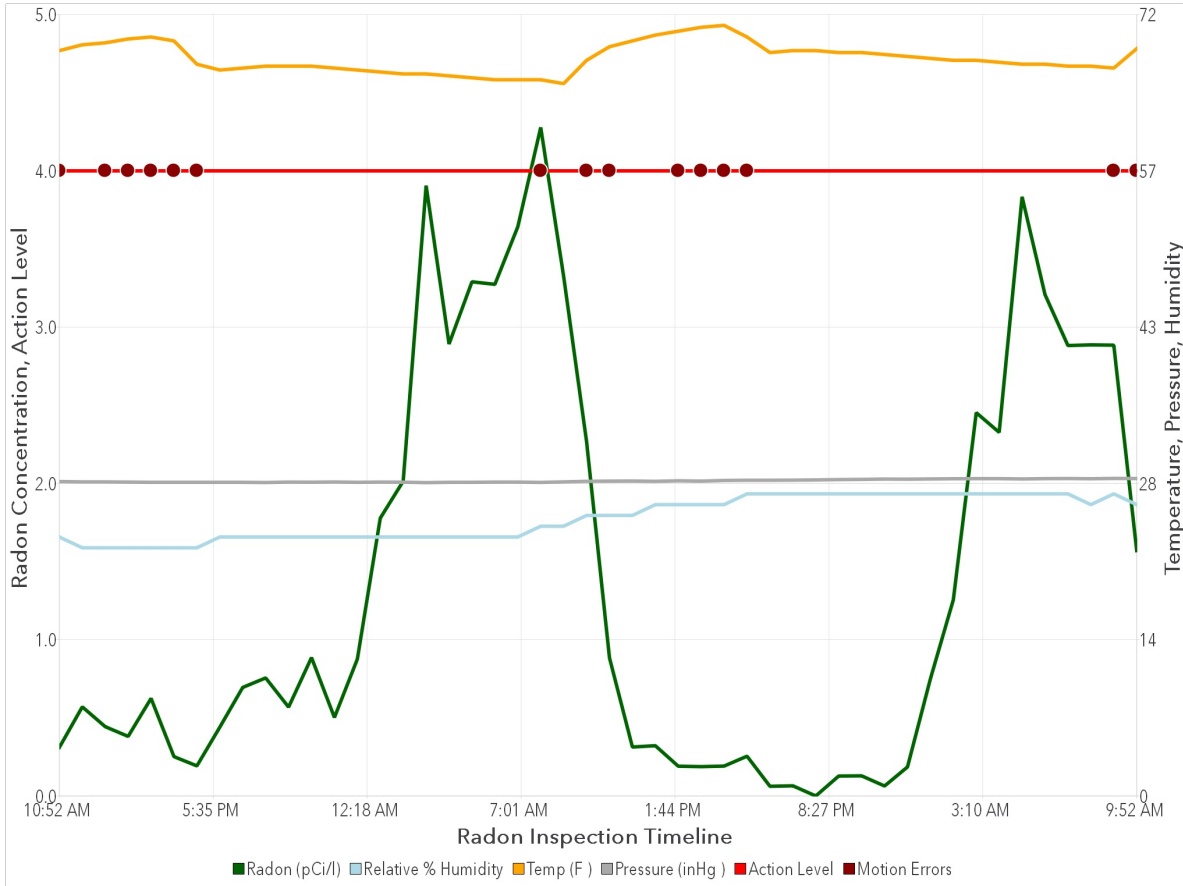
Comments:

Lic/Cert Signature

Inspection Report Date: 11/20/2019



Radon Inspection Chart



Test Result: Pass

Test Location: 919 Emerson Ave. N. Minneapolis, MN 55411

Inspection Report Date: 11/20/2019



Test Table

Date/Time	Radon(pCi/l)	Temp(F)	Pres(inHg)	Humidity(%)	Flags
11/18/19 10:52 AM	0.3	69.1	29.14	24	M
11/18/19 11:52 AM	0.6	69.6	29.11	23	-
11/18/19 12:52 PM	0.4	69.8	29.11	23	M
11/18/19 01:52 PM	0.4	70.2	29.09	23	M
11/18/19 02:52 PM	0.6	70.3	29.07	23	M
11/18/19 03:52 PM	0.3	70.0	29.07	23	M
11/18/19 04:52 PM	0.2	67.8	29.07	23	M
11/18/19 05:52 PM	0.4	67.3	29.07	24	-
11/18/19 06:52 PM	0.7	67.5	29.07	24	-
11/18/19 07:52 PM	0.8	67.6	29.05	24	-
11/18/19 08:52 PM	0.6	67.6	29.09	24	-
11/18/19 09:52 PM	0.9	67.6	29.08	24	-
11/18/19 10:52 PM	0.5	67.5	29.10	24	-
11/18/19 11:52 PM	0.9	67.3	29.07	24	-
11/19/19 12:52 AM	1.8	67.1	29.09	24	-
11/19/19 01:52 AM	2.0	66.9	29.08	24	-
11/19/19 02:52 AM	3.9	66.9	29.04	24	-
11/19/19 03:52 AM	2.9	66.7	29.07	24	-
11/19/19 04:52 AM	3.3	66.6	29.07	24	-
11/19/19 05:52 AM	3.3	66.4	29.09	24	-
11/19/19 06:52 AM	3.6	66.4	29.09	24	-
11/19/19 07:52 AM	4.3	66.4	29.06	25	M
11/19/19 08:52 AM	3.3	66.0	29.11	25	-
11/19/19 09:52 AM	2.3	68.2	29.16	26	M
11/19/19 10:52 AM	0.9	69.4	29.18	26	M
11/19/19 11:52 AM	0.3	70.0	29.19	26	-
11/19/19 12:52 PM	0.3	70.5	29.16	27	-
11/19/19 01:52 PM	0.2	70.9	29.21	27	M
11/19/19 02:52 PM	0.2	71.2	29.18	27	M
11/19/19 03:52 PM	0.2	71.4	29.24	27	M
11/19/19 04:52 PM	0.3	70.3	29.26	28	M
11/19/19 05:52 PM	0.1	68.9	29.26	28	-
11/19/19 06:52 PM	0.1	69.1	29.27	28	-
11/19/19 07:52 PM	0.0	69.1	29.29	28	-
11/19/19 08:52 PM	0.1	68.9	29.32	28	-
11/19/19 09:52 PM	0.1	68.9	29.34	28	-
11/19/19 10:52 PM	0.1	68.7	29.37	28	-
11/19/19 11:52 PM	0.2	68.5	29.36	28	-
11/20/19 12:52 AM	0.7	68.4	29.38	28	-
11/20/19 01:52 AM	1.3	68.2	29.40	28	-
11/20/19 02:52 AM	2.5	68.2	29.41	28	-
11/20/19 03:52 AM	2.3	68.0	29.41	28	-
11/20/19 04:52 AM	3.8	67.8	29.38	28	-
11/20/19 05:52 AM	3.2	67.8	29.41	28	-

Test Result: Pass

Test Location: 919 Emerson Ave. N. Minneapolis, MN 55411

Inspection Report Date: 11/20/2019



Test Table

Date/Time	Radon(pCi/l)	Temp(F)	Pres(inHg)	Humidity(%)	Flags
11/20/19 06:52 AM	2.9	67.6	29.42	28	-
11/20/19 07:52 AM	2.9	67.6	29.40	27	-
11/20/19 08:52 AM	2.9	67.5	29.43	28	M
11/20/19 09:52 AM	1.6	69.3	29.42	27	M

Test Result: Pass

Test Location: 919 Emerson Ave. N. Minneapolis, MN 55411

Inspection Report Date: 11/20/2019

Radon Test Information

Minnesota Notice to Clients

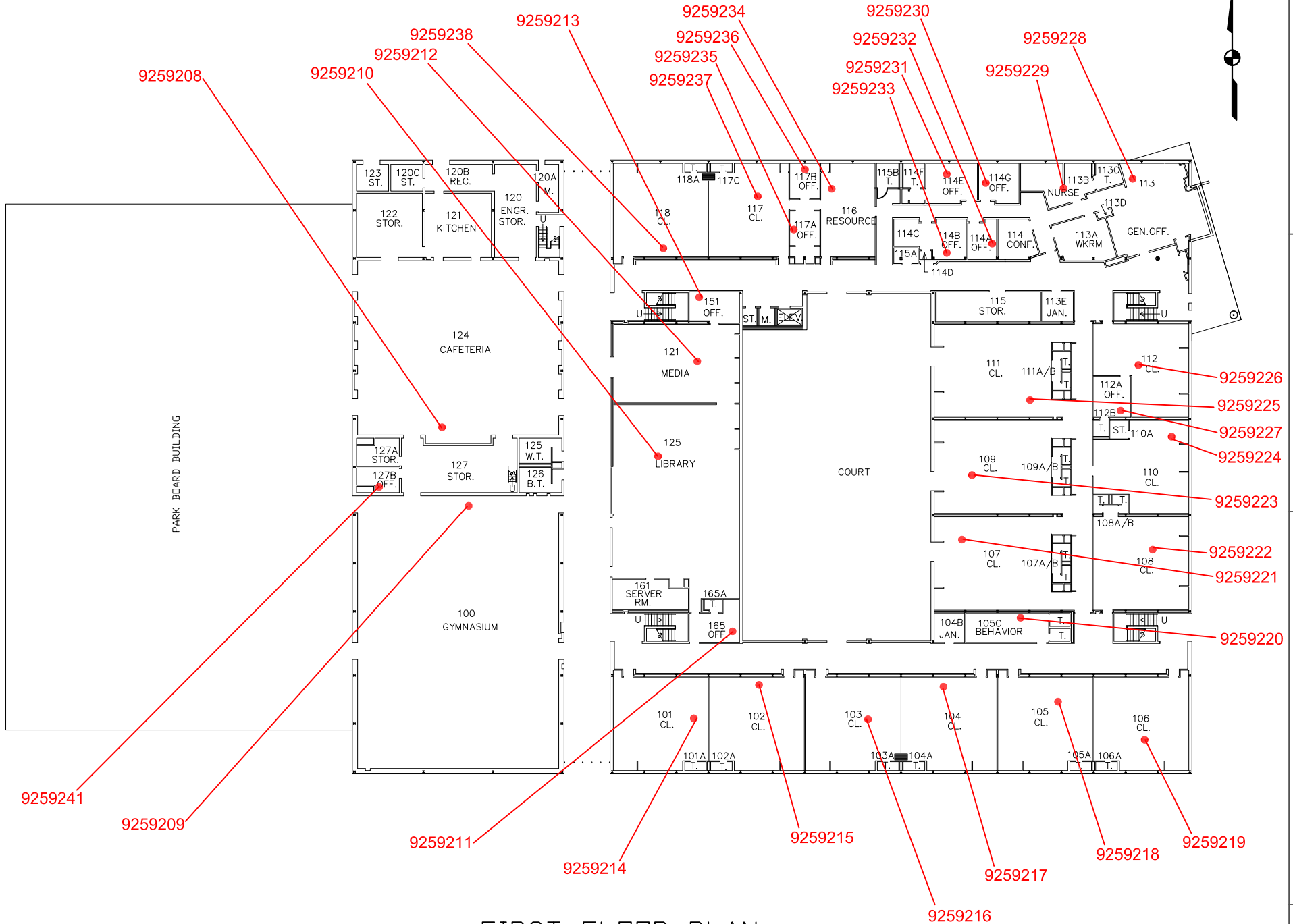
For more information on radon, please contact the Minnesota Department of Health at 651-201-4601 or health.indoorair@state.mn.us or visit their website at <http://www.health.state.mn.us/divs/eh/indoorair/radon/index.html>.

Test Result: Pass

Test Location: 919 Emerson Ave. N. Minneapolis, MN 55411

Inspection Report Date: 11/20/2019

DIAGRAM #1 - RADON SAMPLE LOCATIONS



FIRST FLOOR PLAN

PREPARED ON: 11/5/19
 BY: ANDREW TINKLENBERG
 EH&S SAFETY SPECIALIST

BETHUNE SCHOOL
 919 EMERSON AVE. N.
 MINNEAPOLIS, MN 55411

MINNEAPOLIS
 PUBLIC SCHOOLS
 Urban Education. Global Citizens.

