

January 5, 2023

John Heltunen
Buffalo-Montrose-Hanover Schools
214 – 1st Avenue NE
Buffalo, MN 55313



**RE: Montrose Elementary & Parkside Elementary
2022-2023 Short-Term Radon Testing Results
IEA Project #202210997**

Dear John,

IEA placed Air Chek Pro Chek short-term radon test kits in the following buildings for the purpose of evaluating radon levels:

- Montrose Elementary – 52 samples
- Parkside Elementary – 71 samples

The radon samples were placed by the following Minnesota Department of Health (MDH) licensed Radon Measurement Professionals:

Measurement Professional	License Number	Signature
Jack Skluzacek	RMEA-00475	

Conditions of air intakes were good, and the ventilation system was operating in typical occupied mode at the time of placement and retrieval. The weather conditions included heavy snow during the testing period.

Room 101 at Parkside Elementary School was not tested, as the room was used as storage during the testing period and was not expected to be occupied.

INTRODUCTION

Radon is a colorless, odorless, tasteless, radioactive gas that occurs naturally in soil, rocks, and underground water supplies and in the ambient air. According to the U.S. Environmental Protection Agency (EPA) and other scientific organizations, naturally occurring radon gas has been associated with an increased risk of developing lung cancer. The chances of developing lung cancer from radon exposure are dependent on several factors, including individual susceptibility and, perhaps more importantly, the dose and duration of exposure. Radon testing in schools is highly recommended by the Minnesota Department of Health (MDH) and EPA.

INSTITUTE FOR ENVIRONMENTAL ASSESSMENT, INC.
www.ieasafety.com

BROOKLYN PARK
9201 West Broadway, #600
Brooklyn Park, MN 55445
763-315-7900 / FAX 763-315-7920
800-233-9513

MANKATO
610 North Riverfront Drive
Mankato, MN 56001
507-345-8818 / FAX 507-345-5301
800-233-9513

ROCHESTER
210 Woodlake Drive SE
Rochester, MN 55904
507-281-6664 / FAX 507-281-6695
800-233-9513

BRAINERD
601 NW 5th Street, Ste. #4
Brainerd, MN 56401
218-454-0703 / FAX 218-454-0703
800-233-9513

MARSHALL
1420 East College Drive
Marshall, MN 56258
507-476-3599 / FAX 507-537-6985
800-233-9513

VIRGINIA
5525 Emerald Avenue
Mountain Iron, MN 55768
218-410-9521
800-233-9513

IEA placed Air Chek Pro Chek short-term radon test kits in frequently occupied areas in the buildings listed above at Buffalo-Hanover-Montrose Schools for the purpose of sampling for radon in accordance with the MDH’s *Guidance for Radon Testing in Minnesota Schools (2021)* and ANSI/AARST ‘*Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*’ (ANSI/AARST MALB 2014 with 1/21 revisions). A total of 123 radon test kits were placed from November 29, 2022 to December 2, 2022 for a total short-term sampling period of 4 days. The radon test kits were analyzed by AirChek, Inc., MDH license #RL-00003, located at 1936 Butler Bridge Road, Mills River, NC 28759. The sampling and analysis methodologies are provided in Appendix A.

IEA followed ANSI/AARST MALB 2014 with 1/21 revisions for quality assurance measurements by including duplicate kits, control kits (blanks), and spiked kits.

Client communications and commitments were delivered to the client on the following dates:

- Client Advisories and Authorizations – September 13, 2022
- Facilitating Staff Commitments – September 13, 2022
- Occupant Notices – November 8 and 28, 2022

EVALUATION CRITERIA

The MDH and the EPA have established a recommended action level in intended to be occupied areas of 4.0 picocuries per liter (pCi/L) for an annual average. Testing was conducted during school days when the building is significantly occupied. The HVAC system was set as it normally is during school days. Testing was conducted during the heating season when the average outdoor temperature is less than 65°F., as recommended by the MDH, when the ventilation system was operating normally, and windows and doors were closed. Consequently, sampling under these “closed” conditions is when the radon risk is most likely to occur.

MDH recommends follow-up testing for sampling results that are above the action level. Please refer to the following table for MDH guidelines:

RESULTS (pCi/L)	RECOMMENDED ACTION
LESS THAN 4	Re-test after changes to foundation or HVAC and every 5 years
GREATER THAN 4	Conduct CRM short-term testing during winter months
LESS THAN 4 (<u>DURING OCCUPANCY</u>) AFTER CRM TESTING	Repeat CRM testing if not conducted during winter or if conducted during abnormal ventilation. Otherwise consider re-testing after changes to foundation or HVAC and every 5 years
GREATER THAN 4 (<u>DURING OCCUPANCY</u>) AFTER CRM TESTING	Reduce radon in rooms to less than 4 through radon mitigation. Conduct CRM testing to verify radon reduction.

CRM: Continuous Radon Monitor

RESULTS & DISCUSSION

The laboratory report, which includes maps of each building with sampling locations, is provided in Appendix B. The chain of custody is also provided in Appendix B. Following are summary results for each building.

Montrose Elementary School

100 2nd Street S
 Montrose, MN 55363

A total of 52 test kits were placed at Montrose Elementary. No test kits were missing or damaged when the test kits were collected. The results indicated that radon levels in all locations were below the action level of 4 pCi/L. See Table 1 below for a summary of the results:

TABLE 1: Montrose Elementary School - RANGE OF RESULTS				
	0.0 – 1.9 pCi/L	2.0 – 2.9 pCi/L	3.0 – 3.9 pCi/L	≥ 4 pCi/L
Number of Tests	51	1	0	0
All below action level				

pCi/L: picocuries per liter

Parkside Elementary School

207 3rd Street NE
 Buffalo, MN 55313

A total of 71 test kits were placed at Parkside Elementary. No test kits were missing or damaged when the test kits were collected. The results indicated that radon levels in 1 location was above the action level of 4 pCi/L. See Table 2 below for a summary of the results:

TABLE 2: Parkside Elementary School - RANGE OF RESULTS				
	0.0 – 1.9 pCi/L	2.0 – 2.9 pCi/L	3.0 – 3.9 pCi/L	≥ 4 pCi/L
Number of Tests	38	28	4	1 ¹
¹ 109: 4.1 pCi/L				

pCi/L: picocuries per liter

CONCLUSIONS & RECOMMENDATIONS

It is recommended to take action and address results of radon concentrations greater than half the action level (2-4 pCi/L).

The radon levels in 1 sample location was above the EPA action level of 4 pCi/L. The test data is not yet fully adequate to make decisions whether to mitigate. Follow-up testing should be conducted for all sampling results above the action level within 30 days. Guidelines 1-4 should also be considered if test results indicate radon concentrations between 2-4 pCi/L during the first round of testing. If radon levels continue to indicate concentrations between 2-4, guideline 5 should be considered:

1. If the initial test results are greater than 4 pCi/L, conduct Continuous Radon Monitoring short-term testing during the winter months.
2. If the average radon levels from the CRM are below 4 pCi/L **during occupancy**, then consider re-testing after changes to the building foundation or HVAC system and every 5 years.
3. If the average radon levels from the CRM are above 4 pCi/L **during occupancy**, then the building HVAC system settings (e.g., start time, night set-back temperature) should be adjusted to allow for improved airflow (and thereby reduce radon infiltration into the building). Follow-up CRM testing should be conducted to verify radon reduction. The operation of HVAC system should continue under adjusted settings to keep radon levels within an acceptable range. Documentation should be kept with HVAC operation instructions for the head engineer or custodian and the Director of Buildings and Grounds to ensure that settings are maintained in the future.

4. If the follow-up average radon levels from the CRM are still above 4 pCi/L **during occupancy** (after the HVAC adjustments have been made), then the district should contact a professional radon mitigation contractor for assistance. IEA recommends using a contact with experience specific to schools.
5. Mitigation is not complete until post mitigation clearance testing provides evidence of the initial status of system effectiveness. Post-mitigation clearance testing should be conducted no sooner than 24 hours after a mitigation system is operational and within 30 days after installation of the systems. The clearance testing must include all ground-contact rooms and not less than 10% of rooms on each upper floor. The test should be repeated as soon as possible, or within one year under conditions that reasonably represent:
 - Average building operating conditions exist that are normally present during the greatest amount of significantly occupied time.
 - Building operating conditions exist that are most likely to characterize a radon hazard.

The EPA has established recommended guidelines for permissible radon concentrations in schools. The following are general recommendations for frequently occupied areas of schools:

- The building should be retested at least every 5 years and in conjunction with any sale of the building.
- Rooms that were not tested because they were not occupied, should be tested if they become occupied in the future.
- Test locations that were intended to be tested but did not result in valid measurements (missing test kits).

In addition, retesting should be conducted when any of the following circumstances occur:

- A new addition is constructed, or a significant renovation occurs
- A ground contact area not previously tested is occupied
- Heating or cooling systems are significantly altered, resulting in changes to air pressures or distribution
- Ventilation is significantly altered by extensive weatherization, changes to mechanical systems, or comparable procedures
- Significant openings to soil occur due to:
 - Ground water or slab surface water control systems (e.g., sumps, perimeter drain tile, shower/tub retrofits, etc.)
 - Natural settlement causing major cracks to develop
 - Earthquakes, construction blasting, or formation of sink holes nearby
 - A mitigation system is altered, modified or repaired

Per Minnesota Statutes, section 123B.571, school districts are required to report radon test results at a school board meeting and report results to the MDH. IEA is able to assist with presenting results to the school board, and the MDH reporting. The MDH 'School Radon Testing Form' is located in Appendix E.

For more information regarding radon, see the EPA's A Citizen's Guide to Radon at <http://www.epa.gov/radon>. MDH can be contacted at health.indoorair@state.mn.us or 651-201-4601.

GENERAL COMMENTS

The analysis and opinions expressed in this report are based upon data obtained from radon sampling district-wide and are representative of the locations and time period sampled. This report does not reflect variations in conditions that may occur across the site, property, or facility. Actual conditions may vary and may not become evident without further assessment.

The report is prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted environmental, health and safety practices. Other than as provided in the preceding sentence and in our Proposal #10762 dated September 13, 2022, regarding radon sampling services at the district locations, including the General Conditions attached thereto, no warranties are extended or made.

Should you require additional radon testing or have any questions regarding radon or any other environmental, health, or safety-related concerns, please do not hesitate to contact our office.

Sincerely,

IEA, Inc.



Kennedy Peterson
Project Manager
EHS Division

KP/wb 121422

Enc.

Appendix A

Methodology and Quality Control Measurements

Sampling Methodology

IEA placed Air Chek, Inc. Pro Chek activated charcoal radon test kits designed specifically for the detection of gamma emissions caused by the decay of Radon-222 and its daughter products. The kit is made of a padded envelope which contains activated charcoal. The kit is placed during normal occupancy HVAC operations and sealed with vinyl tape after 72 to 96 hours of indoor exposure. Individual kits are uniquely identified with a number and corresponding bar code.

Upon receipt at the analytical laboratory, the kits are logged in using the unique numbers assigned to each kit. The kits are placed on a gamma detector to count the gamma emissions from the decay of radon adsorbed by the charcoal. A calibration factor determined in part by the exposure time and decay time is used to calculate the radon concentration. A correction factor is also applied for weight gain from any moisture absorbed by the charcoal during the sampling period.

Any unusual conditions are noted on the processing form and shown on the exposure report.

MDH and ANSI/AARST MALB 2014 Quality Control Measurements

IEA followed ANSI/AARST MALB 2014 with 1/21 revisions and MDH recommendations for quality assurance measurements to ensure the accuracy of test results. Quality assurance measurements include side-by-side test kits (duplicates) and unexposed control test kits (blanks).

Duplicates are pairs of test kits placed 4-8 inches apart for the same test period. Duplicates are stored, placed, retrieved, and shipped to the laboratory for analysis in the same manner as the other test kits so that the laboratory cannot distinguish them. Since duplicates are placed side-by-side, the measured values for radon should be the same. The average of all duplicates' relative percent difference (RPD) should not exceed 25%. If they do, an investigation to identify the cause may be warranted and could include repeating the measurements. Duplicate averages are listed in Table 1 below.

Table 1: Duplicate Device Measurements and Averages			
Location	Test 1 (pCi/L)	Test 2 (pCi/L)	Average (pCi/L)
Montrose Elementary			
501	1.4	1.8	1.6
506	1.8	1.6	1.7
Parkside Elementary			
208	1.6	1.9	1.75
209	3.2	2.9	3.05
210	1.7	1.7	1.7
307	1.7	2.5	2.1
310	1.8	2	1.9
316	1.9	1.5	1.7
405	2	2.2	2.1
409 Custodial Office	1.9	2	1.95

Blanks can be used to determine whether the manufacturing, shipping, storage, or processing of the detector has “contaminated” your measurements. Blanks are opened and immediately re-sealed to keep room air from infiltrating the test kit. Blanks are labeled and shipped in the same manner as the exposed test kits so that the laboratory cannot distinguish them. Since blanks are not exposed to radon, their measurement value should be below the lower limit of detection. Field blanks are listed in the laboratory report as FStorage Room A, FStorage Room B, etc. Office blanks are listed in the laboratory report as OStorage Room A, OStorage Room B, etc. Lab-Transit Blanks are listed in Table 2 below.

Table 2: Blanks				
Date	Device ID	Type of Blank	Description	Radon Concentration
12/02/2022	11218857	Field	FStorage Room A	< 0.3
12/02/2022	11218848	Field	FStorage Room B	< 0.3
12/02/2022	11218858	Field	FStorage Room C	< 0.3
12/02/2022	11219296	Office	OStorage Room A	< 0.3
12/02/2022	11219291	Office	OStorage Room B	< 0.3
12/02/2022	11219295	Office	OStorage Room C	< 0.3
1/21/2022	11094801	Lab-Transit	LTStorage Room A	< 0.3
1/21/2022	11094802	Lab-Transit	LTStorage Room B	< 0.3
1/21/2022	11094803	Lab-Transit	LTStorage Room C	< 0.3

Spikes are test kits that have been exposed in a chamber to a known concentration of radon. Using spiked measurements can help evaluate the accuracy of a laboratory analysis and/or how accurately test kits supplied by a laboratory measure radon. Spiked test kits are labeled and shipped in the same manner as the exposed test kits so that the laboratory cannot distinguish them. Spiked results completed for our laboratory are included in the following pages. Spiked test kits are listed in Table 3 below.

Table 3: Spiked Detectors			
Date	Device ID	Measured Value (pCi/L)	Reference Value (pCi/L)
11/04/2022	11130300	26.8	27.6
11/04/2022	11130298	26.5	27.6
11/04/2022	11019440	27	27.6
11/04/2022	11019482	25.3	27.6
11/04/2022	11128517	24.5	27.6
11/04/2022	11128803	24.2	27.6

Appendix B

Laboratory Report and Maps

Appendix A

Methodology and Quality Control Measurements

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12/02/2022	11219296	Office	OStorage Room A	< 0.3
12/02/2022	11219291	Office	OStorage Room B	< 0.3
12/02/2022	11219295	Office	OStorage Room C	< 0.3
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11/04/2022	11128517	24.5	27.6
11/04/2022	11128803	24.2	27.6

Appendix B

Laboratory Report and Maps

Radon test result report for:

**MONTROSE ELEMENTARY SCHOOL
MONTROSE ELEMENTARY**

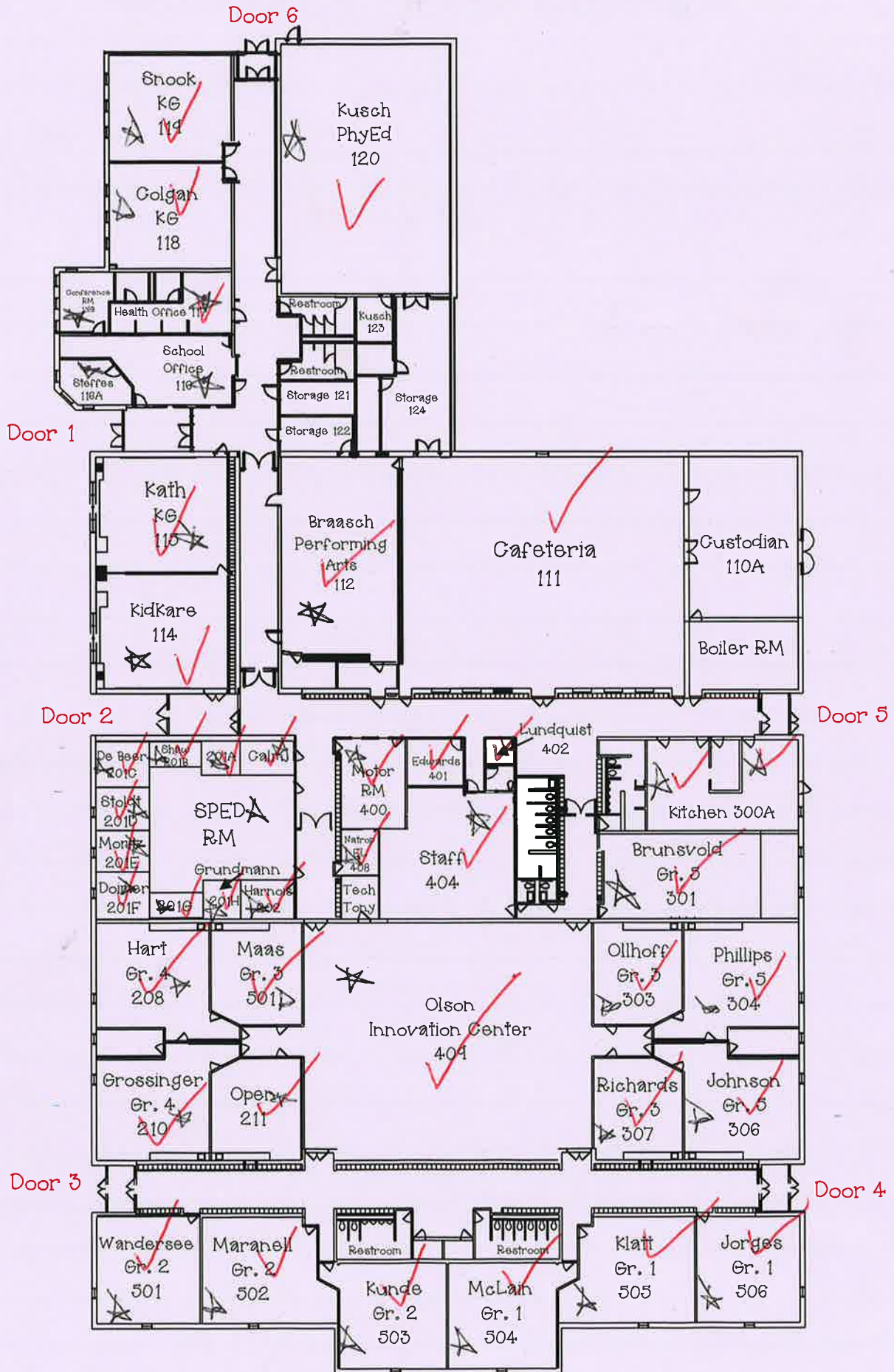
Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11219033	112	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	< 0.3	2022-12-06
11219035	114	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	0.9 ± 0.3	2022-12-06
11219034	115	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	0.8 ± 0.3	2022-12-06
11219029	118	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	1.0 ± 0.4	2022-12-06
11219028	119	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	1.2 ± 0.4	2022-12-06
11219039	201 A	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	1.3 ± 0.3	2022-12-06
11219040	201B	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	1.5 ± 0.4	2022-12-06
11219041	201C	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	1.4 ± 0.3	2022-12-06
11219042	201D	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	1.6 ± 0.4	2022-12-06
11219045	201E	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	1.7 ± 0.4	2022-12-06
11219046	201F	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	1.2 ± 0.4	2022-12-06
11219044	201G	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	1.2 ± 0.3	2022-12-06
11219051	201H	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	1.1 ± 0.3	2022-12-06
11219043	202	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	1.0 ± 0.3	2022-12-06
11219055	207	2022-11-29 @ 9:00 am	2022-12-02 @ 9:00 am	1.3 ± 0.3	2022-12-06
11219056	208	2022-11-29 @ 9:00 am	2022-12-02 @ 9:00 am	1.3 ± 0.3	2022-12-06
11219057	210	2022-11-29 @ 9:00 am	2022-12-02 @ 9:00 am	1.2 ± 0.3	2022-12-06
11219053	211	2022-11-29 @ 9:00 am	2022-12-02 @ 9:00 am	1.2 ± 0.3	2022-12-06
11219073	301	2022-11-29 @ 10:00 am	2022-12-02 @ 10:00 am	1.3 ± 0.3	2022-12-06
11219059	303	2022-11-29 @ 9:00 am	2022-12-02 @ 9:00 am	1.2 ± 0.3	2022-12-06
11219052	304	2022-11-29 @ 9:00 am	2022-12-02 @ 9:00 am	1.3 ± 0.4	2022-12-06
11219058	306	2022-11-29 @ 9:00 am	2022-12-02 @ 9:00 am	1.3 ± 0.3	2022-12-06
11219054	307	2022-11-29 @ 9:00 am	2022-12-02 @ 9:00 am	0.8 ± 0.3	2022-12-06
11219037	400	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	0.5 ± 0.3	2022-12-06
11219074	401	2022-11-29 @ 10:00 am	2022-12-02 @ 10:00 am	1.1 ± 0.3	2022-12-06
11219068	402	2022-11-29 @ 10:00 am	2022-12-02 @ 10:00 am	0.8 ± 0.3	2022-12-06
11219072	404 STAFF	2022-11-29 @ 10:00 am	2022-12-02 @ 10:00 am	1.2 ± 0.3	2022-12-06
11219047	408	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	0.9 ± 0.3	2022-12-06
11219070	501	2022-11-29 @ 9:00 am	2022-12-02 @ 9:00 am	1.4 ± 0.4	2022-12-06
11219069	502	2022-11-29 @ 9:00 am	2022-12-02 @ 9:00 am	1.6 ± 0.4	2022-12-06
11219066	503	2022-11-29 @ 9:00 am	2022-12-02 @ 9:00 am	1.6 ± 0.4	2022-12-06
11219065	504	2022-11-29 @ 9:00 am	2022-12-02 @ 9:00 am	1.9 ± 0.4	2022-12-06
11219064	505	2022-11-29 @ 9:00 am	2022-12-02 @ 9:00 am	1.8 ± 0.4	2022-12-06
11219061	506	2022-11-29 @ 9:00 am	2022-12-02 @ 9:00 am	1.8 ± 0.4	2022-12-06
11219077	CAFETERIA EAST	2022-11-29 @ 10:00 am	2022-12-02 @ 9:00 am	1.2 ± 0.3	2022-12-06
11219078	CAFETERIA SOUTH	2022-11-29 @ 10:00 am	2022-12-02 @ 9:00 am	1.3 ± 0.3	2022-12-06
11219079	CAFETERIA WEST	2022-11-29 @ 10:00 am	2022-12-02 @ 9:00 am	1.0 ± 0.3	2022-12-06

Radon test result report for:

**MONTROSE ELEMENTARY SCHOOL
MONTROSE ELEMENTARY**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11219027	CONFERENCE ROOM	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	1.4 ± 0.4	2022-12-06
11219071	D501	2022-11-29 @ 10:00 am	2022-12-02 @ 9:00 am	1.8 ± 0.4	2022-12-06
11219062	D506	2022-11-29 @ 9:00 am	2022-12-02 @ 9:00 am	1.6 ± 0.4	2022-12-06
11219031	GYM SOUTH	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	0.8 ± 0.4	2022-12-06
11219032	GYM WEST	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	1.0 ± 0.4	2022-12-06
11219026	HEALTH OFFICE	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	1.0 ± 0.4	2022-12-06
11219048	INNOVATION CENTER EAST	2022-11-29 @ 9:00 am	2022-12-02 @ 9:00 am	1.1 ± 0.3	2022-12-06
11219049	INNOVATION CENTER NORTH	2022-11-29 @ 9:00 am	2022-12-02 @ 9:00 am	1.2 ± 0.3	2022-12-06
11219050	INNOVATION CENTER WEST	2022-11-29 @ 9:00 am	2022-12-02 @ 9:00 am	1.1 ± 0.3	2022-12-06
11219060	KITCHEN	2022-11-29 @ 10:00 am	2022-12-02 @ 10:00 am	0.7 ± 0.3	2022-12-06
11219025	MAIN OFFICE	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	1.2 ± 0.4	2022-12-06
11219030	PRINCIPAL OFFICE	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	2.0 ± 0.4	2022-12-06
11219036	SENSORY ROOM "CALM"	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	1.0 ± 0.3	2022-12-06
11219038	SPED RM	2022-11-29 @ 9:00 am	2022-12-02 @ 10:00 am	0.9 ± 0.4	2022-12-06
11219067	WASH ROOM	2022-11-29 @ 10:00 am	2022-12-02 @ 10:00 am	0.9 ± 0.3	2022-12-06

2022-2023 Montrose Elementary School of Innovation Map



Radon test result report for:

**PARKSIDE ELEMENTARY ELEMENTARY
PARKSIDE ELEMENTARY SCHOOL**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11219090	101	2022-11-29 @ 11:00 am	2022-12-02 @ 11:00 am	3.1 ± 0.4	2022-12-06
11219089	102	2022-11-29 @ 11:00 am	2022-12-02 @ 11:00 am	1.9 ± 0.4	2022-12-06
11219087	103	2022-11-29 @ 11:00 am	2022-12-02 @ 11:00 am	2.8 ± 0.4	2022-12-06
11219088	104	2022-11-29 @ 11:00 am	2022-12-02 @ 11:00 am	1.3 ± 0.4	2022-12-06
11219093	105	2022-11-29 @ 11:00 am	2022-12-02 @ 12:00 pm	2.2 ± 0.4	2022-12-06
11219094	107	2022-11-29 @ 11:00 am	2022-12-02 @ 11:00 am	2.0 ± 0.4	2022-12-06
11219098	108	2022-11-29 @ 11:00 am	2022-12-02 @ 11:00 am	2.4 ± 0.4	2022-12-06
11219099	109	2022-11-29 @ 11:00 am	2022-12-02 @ 11:00 am	4.1 ± 0.4	2022-12-06
11219096	113	2022-11-29 @ 11:00 am	2022-12-02 @ 11:00 am	2.1 ± 0.4	2022-12-06
11219081	114	2022-11-29 @ 11:00 am	2022-12-02 @ 11:00 am	1.9 ± 0.3	2022-12-06
11219086	191	2022-11-29 @ 11:00 am	2022-12-02 @ 12:00 pm	1.5 ± 0.4	2022-12-06
11219095	194	2022-11-29 @ 11:00 am	2022-12-02 @ 12:00 pm	2.3 ± 0.4	2022-12-06
11219085	195	2022-11-29 @ 11:00 am	2022-12-02 @ 12:00 pm	2.0 ± 0.4	2022-12-06
11218805	196 TECH STORAGE	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	1.7 ± 0.4	2022-12-06
11219100	198 THINK SPACE	2022-11-29 @ 11:00 am	2022-12-02 @ 12:00 pm	2.3 ± 0.4	2022-12-06
11218803	200 BOOK ROOM	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	1.8 ± 0.4	2022-12-06
11219010	201 COMPUTER LAB	2022-11-29 @ 11:00 am	2022-12-02 @ 12:00 pm	1.4 ± 0.3	2022-12-06
11218806	202	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	2.2 ± 0.4	2022-12-06
11218802	203 STAFF LOUNGE	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	1.8 ± 0.4	2022-12-06
11218810	204B	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	2.7 ± 0.4	2022-12-06
11218809	204C	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	3.5 ± 0.4	2022-12-06
11218811	204D	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	2.3 ± 0.4	2022-12-06
11218801	205	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	2.9 ± 0.4	2022-12-06
11218812	206	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	2.6 ± 0.4	2022-12-06
11218807	207	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	3.8 ± 0.4	2022-12-06
11218813	208	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	1.6 ± 0.4	2022-12-06
11218814	209	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	3.2 ± 0.4	2022-12-06
11218817	210	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	1.7 ± 0.4	2022-12-06
11218822	211	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	1.9 ± 0.4	2022-12-06
11218846	300	2022-11-29 @ 12:00 pm	2022-12-02 @ 11:00 am	1.8 ± 0.4	2022-12-06
11218845	301	2022-11-29 @ 12:00 pm	2022-12-02 @ 11:00 am	1.6 ± 0.4	2022-12-06
11218842	302	2022-11-29 @ 12:00 pm	2022-12-02 @ 11:00 am	1.6 ± 0.4	2022-12-06
11218844	303	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	1.8 ± 0.4	2022-12-06
11218843	305	2022-11-29 @ 12:00 pm	2022-12-02 @ 11:00 am	1.9 ± 0.4	2022-12-06
11218841	307	2022-11-29 @ 12:00 pm	2022-12-02 @ 11:00 am	1.7 ± 0.4	2022-12-06
11218835	308	2022-11-29 @ 12:00 pm	2022-12-02 @ 11:00 am	2.2 ± 0.4	2022-12-06
11218839	309	2022-11-29 @ 12:00 pm	2022-12-02 @ 11:00 am	1.6 ± 0.3	2022-12-06

Radon test result report for:

**PARKSIDE ELEMENTARY ELEMENTARY
PARKSIDE ELEMENTARY SCHOOL**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11218836	310	2022-11-29 @ 12:00 pm	2022-12-02 @ 11:00 am	1.8 ± 0.3	2022-12-06
11218838	311	2022-11-29 @ 12:00 pm	2022-12-02 @ 11:00 am	2.6 ± 0.4	2022-12-06
11218833	312	2022-11-29 @ 12:00 pm	2022-12-02 @ 11:00 am	2.1 ± 0.4	2022-12-06
11218827	314	2022-11-29 @ 12:00 pm	2022-12-02 @ 11:00 am	1.9 ± 0.4	2022-12-06
11218820	315	2022-11-29 @ 12:00 pm	2022-12-02 @ 11:00 am	2.0 ± 0.4	2022-12-06
11218837	316	2022-11-29 @ 12:00 pm	2022-12-02 @ 11:00 am	1.9 ± 0.3	2022-12-06
11218832	401	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	1.4 ± 0.4	2022-12-06
11218831	402	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	2.5 ± 0.4	2022-12-06
11218830	403	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	1.5 ± 0.4	2022-12-06
11218823	404	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	1.8 ± 0.4	2022-12-06
11218825	405	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	2.0 ± 0.4	2022-12-06
11218816	406	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	1.9 ± 0.4	2022-12-06
11218815	407	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	2.1 ± 0.4	2022-12-06
11218824	409 CUSTODIAL OFFICE	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	1.9 ± 0.4	2022-12-06
11218849	CAFETERIA EAST	2022-11-29 @ 1:00 pm	2022-12-02 @ 11:00 am	2.0 ± 0.4	2022-12-06
11218850	CAFETERIA WEST	2022-11-29 @ 1:00 pm	2022-12-02 @ 11:00 am	1.4 ± 0.4	2022-12-06
11218808	D208	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	1.9 ± 0.4	2022-12-06
11218821	D209	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	2.9 ± 0.4	2022-12-06
11218818	D210	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	1.7 ± 0.3	2022-12-06
11218840	D307	2022-11-29 @ 12:00 pm	2022-12-02 @ 11:00 am	2.5 ± 0.4	2022-12-06
11218828	D310	2022-11-29 @ 12:00 pm	2022-12-02 @ 11:00 am	2.0 ± 0.4	2022-12-06
11218819	D316	2022-11-29 @ 12:00 pm	2022-12-02 @ 11:00 am	1.5 ± 0.4	2022-12-06
11218826	D405	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	2.2 ± 0.3	2022-12-06
11218829	D409 CUSTODIAL OFFICE	2022-11-29 @ 12:00 pm	2022-12-02 @ 12:00 pm	2.0 ± 0.4	2022-12-06
11219080	EAGLE'S NEST	2022-11-29 @ 11:00 am	2022-12-02 @ 11:00 am	1.6 ± 0.4	2022-12-06
11218857	FSTORAGE ROOM A	2022-11-29 @ 1:00 pm	2022-12-02 @ 12:00 pm	< 0.3	2022-12-06
11218848	FSTORAGE ROOM B	2022-11-29 @ 1:00 pm	2022-12-02 @ 12:00 pm	< 0.3	2022-12-06
11218858	FSTORAGE ROOM C	2022-11-29 @ 1:00 pm	2022-12-02 @ 12:00 pm	< 0.3	2022-12-06
11219084	GYM OFFICE	2022-11-29 @ 11:00 am	2022-12-02 @ 11:00 am	1.5 ± 0.4	2022-12-06
11219082	GYM SOUTH	2022-11-29 @ 11:00 am	2022-12-02 @ 11:00 am	1.3 ± 0.3	2022-12-06
11219083	GYM WEST	2022-11-29 @ 11:00 am	2022-12-02 @ 11:00 am	1.6 ± 0.3	2022-12-06
11219097	HEALTH OFFICE	2022-11-29 @ 11:00 am	2022-12-02 @ 11:00 am	1.4 ± 0.4	2022-12-06
11218847	KITCHEN	2022-11-29 @ 1:00 pm	2022-12-02 @ 11:00 am	1.5 ± 0.4	2022-12-06
11219075	MAIN OFFICE	2022-11-29 @ 11:00 am	2022-12-02 @ 11:00 am	2.7 ± 0.4	2022-12-06
11219091	MEDIA CENTER EAST	2022-11-29 @ 11:00 am	2022-12-02 @ 12:00 pm	2.0 ± 0.4	2022-12-06
11219092	MEDIA CENTER NORTH	2022-11-29 @ 11:00 am	2022-12-02 @ 12:00 pm	1.6 ± 0.4	2022-12-06
11219076	PRINCIPAL	2022-11-29 @ 11:00 am	2022-12-02 @ 11:00 am	1.9 ± 0.4	2022-12-06

December 6, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**PARKSIDE ELEMENTARY ELEMENTARY
PARKSIDE ELEMENTARY SCHOOL**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11219296	STORAGE ROOM A	2022-11-29 @ 1:00 pm	2022-12-02 @ 1:00 pm	< 0.3	2022-12-06
11219291	STORAGE ROOM B	2022-11-29 @ 1:00 pm	2022-12-02 @ 1:00 pm	< 0.3	2022-12-06
11219295	STORAGE ROOM C	2022-11-29 @ 1:00 pm	2022-12-02 @ 1:00 pm	< 0.3	2022-12-06

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

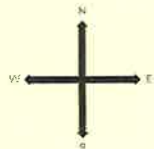
May Not Be Occupied (Still Tested)



PARKSIDE ELEMENTARY SCHOOL

FLOOR PLAN
207 3RD STREET NORTHEAST
BUFFALO, MN 55313

2022-2023



Sami room

Appendix C

Signed Non-Interference Agreement

NOTICE OF INSPECTION FOR ALL FACILITATING STAFF

A radon test is scheduled for:

Building: Montrose Elementary School

Test Start Date: _____ Test End Date: _____

Please help to maintain the required test conditions throughout the building

1. All windows and exterior doors must be kept closed (aside from momentary entry or exit) for 12 hours before and during the test.
2. Heating and cooling systems must be set to normal occupied operating temperatures.
3. Test devices are not to be disturbed.

Further guidance on required building conditions are located on the next page.

Test devices are not dangerous in anyway. The type of devices used for this testing will include:

Short-term test kits. It is important that these devices are fully open and not covered. They will be analyzed by a laboratory.

Continuous radon monitors. These are electronic devices that record hourly radon readings.

Long-term test kits. It is important that these devices are not covered. They will be analyzed by a laboratory.

Declaration of Observed Compliance

Failure to reasonably maintain test conditions can lead to unnecessary expense, disruptions and unreliable data. Disturbing test devices can also cause unreliable or invalid test results.

- Please report in a timely manner if required test conditions are not maintained.
- Please sign and return this form once the test is complete.

To the best of my knowledge, the required conditions were maintained during the test.

Yes No

Name: Jack Strong

Signature: [Handwritten Signature]

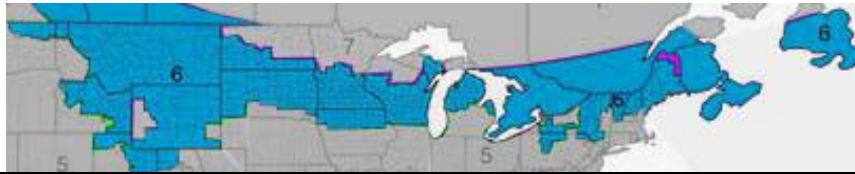
For more information regarding on-site activities, contact:

Licensed Measurement Professional:

Appendix D

Average Building Operating Conditions Comparison

Climate Zone 6



		Averages			During the Test
		24 Hour	Daytime	Daytime 9-Month	Prevailing During the Test
Operating Condition	Outdoor Temperature	45 °F	50 °F	N/A	23 °F
	Heating Conditions	75%	66%	88%	100%
	Cooling Conditions	-	16%	11%	0%
	Mixed Conditions	25%	16%	-	0%
Normal Operating Condition		<ul style="list-style-type: none"> • Heating conditions • No variance in outdoor air ventilation 			<ul style="list-style-type: none"> • Heating conditions • No variance in outdoor air ventilation
Condition less likely to inhibit characterization of a radon hazard		<ul style="list-style-type: none"> • Heating and air distribution systems active 			<ul style="list-style-type: none"> • Heating and air distribution systems active

Appendix E

MDH Reporting Form

School Radon Testing Reporting Form

According to Minnesota Statute 123B.571 subd. 3, a school district that has tested its school buildings for the presence of radon shall report the results of its tests to the Department of Health. Please use this form to submit information about the most recent round or cycle of testing conducted for each building.

Instructions

1. Complete one form for each building tested. In this case, a building is defined as an occupied facility with a unique address. This includes administrative buildings.
2. Include this form, raw data (e.g. laboratory report) and a building map.
3. Submit this form when all work is completed for a round of testing. This includes reporting to the school board, and follow-up testing and post-mitigation testing, if applicable.
4. Email information to health.indoorair@state.mn.us.

Contact Information

Name:	
Mailing Address:	
Phone:	Email:

Initial Radon Testing Information

School Building Name:	
School District & District Number:	
Building Address:	
Test Kit Manufacturer:	Device Name:
Date of Kit Retrieval (DD/MM/YY):	Length of Test (days):
How many rooms were tested?	
Does the test period include weekends? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Does the test period include school breaks or holidays? <input type="checkbox"/> Yes <input type="checkbox"/> No	

SCHOOL RADON TESTING REPORTING FORM

Were all frequently-occupied ground contact rooms tested? ¹ <input type="checkbox"/> Yes <input type="checkbox"/> No If no, did you attempt to test all frequently occupied ground contact rooms, meaning test kits were placed in all these rooms? <input type="checkbox"/> Yes <input type="checkbox"/> No
How many rooms had results ≥ 4 pCi/L?:
Were the results reported at a school board meeting? <input type="checkbox"/> Yes <input type="checkbox"/> No

Follow-up Testing, Mitigation, & Post-Mitigation Testing

If one or more rooms tested ≥ 4 pCi/L, please answer the questions below:

How many rooms had follow-up testing?:		
Number of rooms with follow-up results	≥ 4 pCi/L:	< 4 pCi/L:
Of the rooms that had test results ≥ 4 pCi/L, how many rooms were:		
mitigated by HVAC balancing or operational changes? :		
mitigated by installation of active soil depressurization?:		
addressed through other corrective measures? ² :		
What was the cost of the installation and/or HVAC service work, to mitigate radon? \$		
What is the known or anticipated annual operating cost of mitigation (estimate)? \$		
After radon mitigation, how many rooms were retested?:		
Post mitigation results (# of rooms)	≥ 4 pCi/L:	< 4 pCi/L:

¹ This includes classrooms, offices, break rooms, laboratories, cafeterias, libraries, auditoriums, gymnasiums, etc. It includes rooms on grade and rooms above unoccupied spaces that are in contact with the ground, such as rooms above storage rooms, crawl spaces, tunnels, and boiler rooms. If only a sample or portion of rooms were tested, then respond with 'no'.

² 'Other corrective measures' could include moving staff out of a room and making a room unoccupied or trying to seal radon entry points.