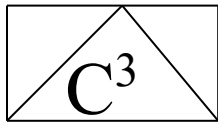


20390600

<u>Serial Number</u>	<u>Start Date</u>	<u>Start Time</u>	<u>Stop Date</u>	<u>Stop Time</u>	<u>Temp.</u>
9418901	03/08/2021	11:00	03/11/2021	12:00	68
9418902	03/08/2021	11:00	03/11/2021	12:00	68
9418903	03/08/2021	11:00	03/11/2021	12:00	68
9418904	03/08/2021	11:00	03/11/2021	12:00	68
9418905	03/08/2021	11:00	03/11/2021	12:00	68
9418906	03/08/2021	11:00	03/11/2021	12:00	68
9418907	03/08/2021	11:00	03/11/2021	12:00	68
9418908	03/08/2021	11:00	03/11/2021	12:00	68
9418909	03/08/2021	11:00	03/11/2021	12:00	68
9418910	03/08/2021	11:00	03/11/2021	12:00	68
9418911	03/08/2021	11:00	03/11/2021	12:00	68
9418912	03/08/2021	11:00	03/11/2021	12:00	68
9418913	03/08/2021	11:00	03/11/2021	12:00	68
9418914	03/08/2021	11:00	03/11/2021	12:00	68
9418915	03/08/2021	11:00	03/11/2021	12:00	68
9418916	03/08/2021	11:00	03/11/2021	12:00	68

<u>Facility</u>	<u>Building</u>	<u>Room</u>	<u>Type</u>	<u>Floor</u>	<u>pCi/L</u>
Big House	20390600	Main Office		1	1.1
Big House	20390600	Big Room		1	0.8
Big House	20390600	Bat Room		1	1.4
Big House	20390600	Narnia		1	0.9
Big House	20390600	Counseling		1	0.7
Big House	20390600	Counselor		1	0.9
Big House	20390600	Counselor	Duplicate	1	1.1
The House	20390601	Health		1	0.6
The House	20390601	Thing 1		1	0.7
Duplex	20390602	Duplex A		1	1.1
Duplex	20390602	B Library		1	<0.3
Duplex	20390602	B Class		1	0.6
Duplex	20390602	B Class	Duplicate	1	<0.3
Big House	20390602	B Class	Blank	1	<0.3
Duplex	20390602	B Class	Blank	1	<0.3
Duplex	20390602	B Class	Spike	1	16.5



Coleman Creek Consulting, Inc.

INITIAL RADON AIR SAMPLING OF ARMADILLO TECHNICAL INSTITUTE BUILDINGS FOR ARMADILLO TECHNICAL INSTITUTE 106 N. ROSE STREET, PHOENIX, OREGON

INTRODUCTION

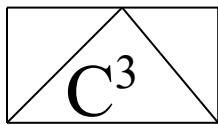
Coleman Creek Consulting, Inc. (CCC) was retained by Armadillo Technical Institute (ATI) to perform radon air sampling as required by State Statute ORS 332.166-167. KCS D is required to perform complete radon air testing of School owned and occupied facility buildings by January 1, 2021. The purpose of the initial radon air sampling was to collect radon air samples from all regularly occupied rooms within school buildings, with the exception of storage, restrooms, kitchen, locker rooms, and compare analytical results with the EPA recommended “Action Level” concentration for radon. Short-term radon air sampling was selected for this project.

RADON INFORMATION AND HEALTH EFFECTS

Radon is a naturally occurring radioactive gas that is produced by natural deposits of uranium in soil, and is found world-wide. Uranium naturally decays into Radium, and Radium can produce Radon gas. Radon gas can travel up through soil and enter buildings in contact with soil. Radon gas entering a building may become concentrated in the lowest part of the building in areas with little fresh air mixing. If radon is inhaled into lungs, particle decay processes can release radiation, potentially damaging lung tissue, and over time leading to lung cancer. The Environmental Protection Agency (EPA) has estimated that Radon is the primary cause of lung cancer among non-smokers. EPA recommends reducing the concentration of Radon in indoor environments to below the Action Level of 4.0 pCi/L (pico-curies per Liter of air).

INITIAL RADON AIR SAMPLING

David W. Fawcett of CCC placed radon air test kits in the ATI buildings, March 8, 2021. A total of 11 locations were sampled according to guidelines established in the Oregon Health Authority (OHA) “Testing for Elevated Radon in Oregon Schools, A Protocol and Plan”, dated 2016. Mr. Fawcett returned to the ATI buildings March 11, 2021, and collected all radon test kits placed for sampling. See Radon Air Sample Record Sheet (page 4) for locations of all areas sampled. All samples collected were packaged by Mr. Fawcett, and sent overnight to Air Chek, Inc., in Mills River, North Carolina for analysis.



Coleman Creek Consulting, Inc.

LABORATORY ANALYSIS RESULTS

The radon air test kit samples collected from ATI buildings were reported ranging from <0.3 to 1.4 pCi/L (picocuries per liter of air). A complete listing of laboratory results and locations is found in the Air Chek, Inc. Laboratory Analysis Report in Appendix A.

QUALITY ASSURANCE

To ensure that test results are reliable and accurate, quality assurance samples, including duplicate test kits (placed in same room), blank test kits (not sampled at all), and spike sampling (exposing test kits to a measured amount of radon prior to laboratory submission) were all employed during Radon sampling. The number of duplicate, blank, and spike test kits utilized during sampling followed OHA testing protocol guidelines.

DUPLICATE TEST KITS

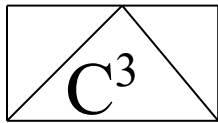
A total of two duplicate test kits were placed during initial test kit sampling. See duplicate designation on the Radon Air Sample Record Sheet. The two duplicate test kit sets were reported with paired concentrations of 0.9/1.1 pCi/L, and 0.6/<0.3 pCi/L. The Relative Percent Difference for each pair was 22%, and 50%. The first pair was within the expected range of 0-25% Relative Percent Difference, with the other pair reported with concentrations <2.0 pCi/L, indicating Radon concentrations were too low to apply the Relative Percent Difference test.

BLANK TEST KITS

Two blank test kits were submitted to Air Chek with the other ATI Radon test kits. The blank test kits were both reported with <0.3 pCi/L. The blank test kits were both reported none detected for Radon.

SPIKE TEST KIT ANALYSIS

One test kit was submitted to Bowser-Morner for Radon Spike processing. The test kit was exposed to 26.1 pCi/L for three days from March 6 through March 9, 2021. See Appendix B for the Bowser-Morner Radon Exposure test information. The “Spiked” test kit was submitted to Air Chek for analysis along with the other ATI Radon test kits. The Spike sample was reported with 16.5 pCi/L. The relative percentage error was calculated to be -37%, in the out of control range (greater than -30%). The Spike lab Bowser-Moerner was contacted, and did not report any unusual occurrence during Spike activities. The analytical lab (Air Chek) was contacted, and no unusual occurrences were noted during test kit analysis. Spike test kits were shipped twice during cold temperatures, and that may have had an effect on the Spike sample results. The Spike sample is identified as Serial #9418916 on the Laboratory Analysis Report in Appendix A.



Coleman Creek Consulting, Inc.

RADON RESULTS AND FUTURE ACTIONS

The 2016 OHA Testing of Elevated Radon in Oregon Schools Protocol and Plan describes future steps to take based on initial Radon sample results. The following is a description of recommended actions based on Radon concentrations reported.

1. If <2.0 pCi/L Radon is reported, ORS 332.166-167 requires Radon re-test every 10 years.
2. If 2.0 pCi/L to 4.0 pCi/L Radon is reported, consider lowering the Radon concentration in the room.
3. If 4.0 pCi/L to 8.0 pCi/L Radon is reported, perform follow-up Radon measurement in the affected room(s) using a long-term test. Conduct over the school year as much as possible. If that result is equal to or greater than 4.0 pCi/L, Radon concentration in the room should be lowered.
4. If equal to or greater than 8.0 pCi/L Radon is reported, conduct a second short-term test and average the result with the initial Radon result. If the average result of the two short-term tests is equal to or greater than equal to or greater than 4.0 pCi/L, Radon concentration in the room should be lowered.

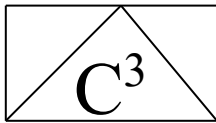
DISCUSSION OF INTIAL RADON SAMPLING RESULTS

The initial Radon short-term sampling in the ATI buildings were reported with Radon concentrations ranging from <0.3 to 1.4 pCi/L. All Radon test kit samples were reported < 2.0 pCi/L, indicating that a re-test should be performed in 10 years.

CCC appreciates the opportunity to provide initial radon air testing and consulting to Armadillo Technical Institute.

Sincerely,

David W. Fawcett
Director of Consulting Operations



Coleman Creek Consulting, Inc.

RADON AIR SAMPLE RECORD SHEET

SCHOOL: Armadillo Technical Institute
ADDRESS: 106 N. Rose Street
Phoenix, Oregon

DATE: 03-08-21/03-11-21
SAMPLER: David Fawcett

SERIAL #	BUILDING	Duplicate	LOCATION	START TIME	STOP TIME
9418901	Big House		1 – Main Office	1043	1132
9418902	Big House		2 – Big Room	1045	1134
9418903	Big House		3 – Bat Room	1048	1136
9418904	Big House		4 – Narnia	1052	1138
9418905	Big House		5 – Counseling Room	1054	1140
9418906	Big House		6 – Counselor	1056	1142
9418907	Big House	Yes	6 – Counselor	1056	1142
9418908	The House		7 – Health Room	1100	1145
9418909	The House		8 – Thing 1	1102	1147
9418910	Duplex		9 – Duplex A	1109	1150
9418911	Duplex		10 – Duplex B, Library	1112	1152
9418912	Duplex		11 – Duplex B, Classroom	1115	1154
9418913	Duplex	Yes	11 – Duplex B, Classroom	1115	1154

Comments: **Spike Sample = 9418916**
Blank Sample = 9418914, 9418915

APPENDIX A

AIR CHEK LABORATORY ANALYSIS REPORT

March 23, 2021

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
BIG HOUSE

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9418903	BAT ROOM	2021-03-08 @ 11:00 am	2021-03-11 @ 12:00 pm	1.4 ± 0.3	2021-03-12
9418902	BIG ROOM	2021-03-08 @ 11:00 am	2021-03-11 @ 12:00 pm	0.8 ± 0.3	2021-03-12
9418905	COUNSELING	2021-03-08 @ 11:00 am	2021-03-11 @ 12:00 pm	0.7 ± 0.3	2021-03-12
9418906	COUNSELOR	2021-03-08 @ 11:00 am	2021-03-11 @ 12:00 pm	0.9 ± 0.3	2021-03-12
9418907	COUNSELOR	2021-03-08 @ 11:00 am	2021-03-11 @ 12:00 pm	1.1 ± 0.3	2021-03-12
9418901	MAIN OFFICE	2021-03-08 @ 11:00 am	2021-03-11 @ 12:00 pm	1.1 ± 0.3	2021-03-12
9418904	NARNIA	2021-03-08 @ 11:00 am	2021-03-11 @ 12:00 pm	0.9 ± 0.3	2021-03-12

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

March 23, 2021

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
DUPLEX

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9418912	B CLASS	2021-03-08 @ 11:00 am	2021-03-11 @ 12:00 pm	0.6 ± 0.3	2021-03-12
9418913	B CLASS	2021-03-08 @ 11:00 am	2021-03-11 @ 12:00 pm	< 0.3	2021-03-12
9418914	B CLASS	2021-03-08 @ 11:00 am	2021-03-11 @ 12:00 pm	< 0.3	2021-03-12
9418915	B CLASS	2021-03-08 @ 11:00 am	2021-03-11 @ 12:00 pm	< 0.3	2021-03-12
9418916	B CLASS	2021-03-08 @ 11:00 am	2021-03-11 @ 12:00 pm	16.5 ± 1.0	2021-03-12
9418911	B LIBRARY	2021-03-08 @ 11:00 am	2021-03-11 @ 12:00 pm	< 0.3	2021-03-12
9418910	DUPLEX A	2021-03-08 @ 11:00 am	2021-03-11 @ 12:00 pm	1.1 ± 0.3	2021-03-12

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

March 23, 2021

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
THE HOUSE

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9418908	HEALTH	2021-03-08 @ 11:00 am	2021-03-11 @ 12:00 pm	0.6 ± 0.3	2021-03-12
9418909	THING 1	2021-03-08 @ 11:00 am	2021-03-11 @ 12:00 pm	0.7 ± 0.3	2021-03-12

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

APPENDIX B

BOWSER-MORNER RADON SPIKE EXPOSURE

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT Coleman Creek Consulting, Inc Job Number 199922

NOMINAL Conditions: Radon Conc 26.1 pCi/L Rel. Hum 50.0 % Temp. 70.0 F

Date Start: 3/6/21 Date Stop: 3/9/21 Date Start: _____ Date Stop: _____

Time Start: 0844 Time Stop: 0844 Time Start: _____ Time Stop: _____

Device No.'s: (1) Char Bags Device No.'s: _____

9418916 _____

OS Right

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

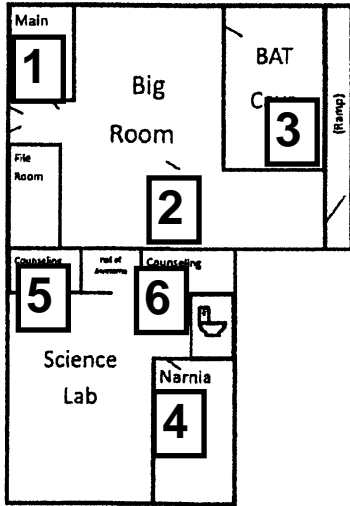
APPENDIX C

RADON SAMPLING LOCATION DIAGRAM

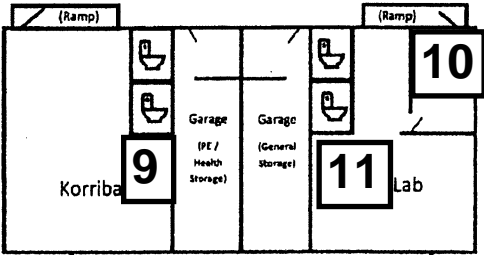
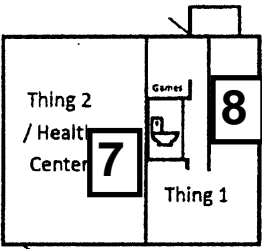
RADON TEST KIT LOCATIONS

Armadillo Technical Institute - 106 N. Rose

Big House



Duplex A Duplex B



The House

LEGEND:

3 = Radon Test Kit Location