

July 20, 2019
EIS JOB No. 2019062.radon

Myrtle Point Superintendent
Myrtle Point SD 41
413 C Street
Myrtle Point, Oregon 97458

RE: Short term radon testing of The Myrtle Point SD 41 building
located at 413 C Street in Myrtle Point, Oregon 97458

Dear Superintendent,

This letter summarizes the finding of a short term (48-hour) radon sampling test episode conducted at the subject school property improvements between July 9 and July 11, 2019. The subject school improvements are collectively referred to as the Myrtle point SD 41 administration building located at 413 C Street in Myrtle Point, Oregon was performed by Charles A. Spear, field representative of Environmental Inspection Services (EIS) with no custodian escort through the entire building. No elevated radon considerations were noted for the radon test results for the administration building based on the short term simultaneous test results.

The U.S Environmental Protection Agency (EPA) and other major national and international scientific organizations have concluded that radon is a human carcinogen and poses a serious environmental health problem. The EPA recommends that schools take action to reduce the level of radon when levels are 4 pCi/L or higher.

A total of twenty-one (21) short term radon test units were placed throughout the district administration building. No radon measurements approaching four (4) picocuries per liter (pCi/L) were analytically confirmed in any of the samplers. Radon measurements between 0.5 pCi/L and 0.9 pCi/L were confirmed in a total of ten (10) samplers. Radon measurements lower than 0.5 pCi/L were confirmed in a total of eleven (11) samplers. No elevated radon considerations were noted for the radon test results for the administration building based on these short term simultaneous test results.

Radon concentration levels have been noted to vary from school to school and also from room to room. All frequently occupied rooms in contact with the ground require testing. This radon sampling episode noted the following;

Total number of testers - Twenty-one(21)
 High reading - one -(1) - 0.9 pCi/L - kitchen
 Low reading - one - (1)- 0.2 pCi/L - Yoga room

The average radon Myrtle point SD-41 reading was 0.48 pCi/L with analytical test results varying from a radon low concentration measurement of 0.2 pCi/l to a high concentration measurement of 0.9 pCi/L. No additional short term test radon testing is recommended at this time based on the radon short term analytical test results.

The total of twenty-one (21) radon test units supplied by Pro-lab were placed within functional administration areas of the Myrtle Point SD-41 school between July 9 and July 11, 2019. The total of twenty-one (21)short term samplers were capped and submitted to Pro-lab laboratories for radon analysis on Thursday, July 11, 2019 and received by the Pro-Lab laboratories on Monday, July 15, 2019. Radon test results were reported to EIS on Wednesday, July 17, 2019. Radon measurement levels varied from a low concentration of 0.2 pCi/L at one (1) test positions to a single test position reading of 0.9 pci/L. No elevated radon concentrations were detected in the administration building samplers.

The highest sample concentrations between 0.5 pCi/L and 0.9 pCi/L were detected in the following samplers;

| <u>Sample serial No.</u> | <u>Sample location</u> | <u>Sample test result</u> |
|--------------------------|------------------------|---------------------------|
| 4793467 | Gym (center) | 0.7 pCi/L |
| 4797754 | Gym (edge) | 0.7 pCi/L |
| 4793696 | Gym (front) | 0.5 pCi/L |
| 4793484 | Gym (edge) | 0.8 pCi/L |
| 4793824 | Kitchen | 0.9 pCi/L |
| 4793780 | Office | 0.7 pCi/L |
| 4793956 | Fiscal office | 0.5 pCi/L |
| 4794282 | Gardina Office | 0.5 pCi/L |
| 4793653 | Rear office | 0.5 pCi/L |

EIS noted no additional radon measurement requirements for the Myrtle Point SD 41 administration building based on the analytical test results for the samples submitted for independent radon analysis.

The radon was measured at the Pro-Lab Laboratory located at 1675 North Commerce Parkway in Weston, Florida and Environmental Hazards Services LLC at 7469 White Pine Road in Richmond, Virginia using the liquid scintillation Method (EPA 402-R-92-004).

The selected radon sampler devices utilized at the Myrtle point SD 41 Administration building is described as passive activated charcoal adsorption devices (AC). The selected passive radon tester devices do not uniformly adsorb radon during the testing episode and are not described as integrating devices). The radon samplers were opened on Tuesday, July 9, 2019 and capped on Thursday, July 11, 2019. Radon test results were reported to EIS on Wednesday, July 17, 2019. Radon measurement levels varied from a low concentration of 0.2 pCi/L at one (1) test positions to a single test position reading of 0.9 pci/L. No elevated radon concentrations were detected in the administration building samplers.

The passive radon samplers were placed in the center and at the edges the all the test areas to include the offices, and classrooms. The capped radon samplers were packaged; logged on a chain of custody form; and shipped to ProLab Laboratories.

In the opinion of EIS, no additional short term radon retesting is required at the Myrtle point Sd 41 administration building. In the opinion of EIS, the satisfactory radon test results are generally indicative of generally satisfactory radon conditions in the functional office and classrooms and other student and staff occupied spaces of the subject buildings and no additional short-term radon testing is required at the school building based on these radon measurement test results at this time. The sample analytical position and result tables are listed in Appendix 2.0 of this report.

In the opinion of EIS, no significant data gaps remain concerning radon risk at the subject property based on current analytical radon test results. Actual radon analytical test results are included as listed in Appendix 2.0 of this report.

RADON

Radon gas is an extremely toxic, chemically inert, odorless, colorless, and tasteless naturally-occurring radioactive element having the symbol Rn. Radon has the atomic number 86; an atomic weight of 222; a melting point of -71 degrees Celsius; a boiling point of -62 degrees; and 18 radioactive isotopes. It is derived from the radioactive decay of radium and is used in cancer treatment; as a tracer in leak detection; and in radiology.

Myrtle Point SD 41 school district buildings radon measurements varied between 0.2 to 0.9 pCi/l. with an average reading of 0.48 pCi/L. The concentrations of radon in a building are dependent on factors to include the concentration of uranium and radium in the soil; the type of underlying geology; soil permeability; available migration pathways such as subsurface utilities; foundation openings; air temperature and pressure differentials and building ventilation.

Radon may migrate into a study area by either a pressure driven transport or no pressure differentials. The subject school was built on concrete foundation and slab on slab foundations. Radon may migrate through foundations by the availability of expansion joints and cracks in the foundation. Radon may also migrate into a building through basements, utility trenches, pipe runs, HVAC systems, and other building ventilation systems. Radon contributions from building materials off-gassing are not often the source of measurable radon.

In the opinion of EIS, based on actual extensive passive radon testing at the subject buildings no additional limited short term radon retesting is recommended at the Myrtle Point Administration building at this time. In the opinion of EIS, the satisfactory radon test results are generally indicative of satisfactory radon conditions at the Myrtle point Administration building. If there any questions feel free to contact me at (503) 680-6398.

Respectfully,


Charles A. Spear
Environmental Professional

July 20, 2019
EIS JOB No. 2019062.high school radon

Myrtle Point Superintendent
Myrtle Point SD 41
413 C Street
Myrtle Point, Oregon 97458

RE: Short term radon testing of The Myrtle Point High
School located at 717 4th Street in Myrtle Point,
Oregon 97458

Dear Superintendent,

This letter summarizes the finding of a short term (48-hour) radon sampling test episode conducted at the subject school property improvements between July 9 and July 11, 2019. The subject school improvements are collectively referred to as the Myrtle point High School building located at 717 4th Street in Myrtle Point, Oregon. The radon test episode was performed by Charles A. Spear, field representative of Environmental Inspection Services (EIS) with no custodian escort through the entire building. **No elevated radon considerations were noted for the July, 2019 radon test results for the high school building based on the short term simultaneous test results.**

The U.S Environmental Protection Agency (EPA) and other major national and international scientific organizations have concluded that radon is a human carcinogen and poses a serious environmental health problem. The EPA recommends that schools take action to reduce the level of radon when levels are 4 pCi/L or higher.

A total of thirty-nine (39) short term radon test units were placed throughout the Myrtle point High School building. No radon measurements approaching four (4) picocuries per liter (pCi/L) were analytically confirmed in any of the radon samplers. Radon concentration test results varied from a low measurement of 0.2 pCi/L to a high reading of 2.1 pCi/L. No elevated radon considerations were noted for the radon test results for the Myrtle Point High School building based on these short term simultaneous test results. One reading at the small band office room of 5.8 pCi/L per serial No. 4793455 is considered an anomaly due to very low radon concentration readings measured throughout the music room study area to include the surrounding band room and choir room.

Radon concentration levels have been noted to vary from school to school and also from room to room. All frequently occupied rooms in contact with the ground require testing. This radon sampling episode noted the following;

Total number of testers - thirty-nine(39)
 High reading - one -(1) - 2.1 pCi/L - Athletic
 Lower readings - eleven (11)- 0.2 pCi/L

The average radon Myrtle point High School measurement was 0.81 pCi/L with analytical test results varying from a radon low concentration measurement of 0.2 pCi/l to a high concentration measurement of 2.1 pCi/L. No additional short term test radon testing is recommended at this time at the Myrtle point high School based on the radon short term analytical test results.

The total of Forty (40) radon test units supplied by Pro-lab were placed within functional administration areas of the Myrtle Point SD-41 High school between July 9 and July 11, 2019. The total of thirty-nine (39)short term samplers were capped and submitted to Pro-lab laboratories for radon analysis on Thursday, July 11, 2019 and received by the Pro-Lab laboratories on Monday, July 15, 2019. Radon test results were reported to EIS on Wednesday, July 17, 2019. Radon measurement levels varied from a low concentration of 0.2 pCi/L to 2.1 pCi/L. No elevated radon concentrations were detected in the Myrtle Point High School building radon samplers. The highest radon sample concentrations between 1.0 pCi/L and 2.1 pCi/L were detected in the following samplers;

| <u>Sample serial No.</u> | <u>Sample location</u> | <u>Sample test result</u> |
|--------------------------|------------------------|---------------------------|
| 4793900 | Music storage | 1.7 pCi/L |
| 4793414 | Room 11 | 1.0 pCi/L |
| 4793875 | Room 19 | 1.6 pCi/L |
| 4793748 | Room 19 | 1.2 pCi/L |
| 4797726 | Office | 2.0 pCi/L |
| 4793429 | Athletic | 2.1 pCi/L |
| 4794279 | Principal | 1.3 pCi/L |
| 4793885 | Room 18 | 1.4 pCi/L |
| 4793876 | Room 16 | 1.3 pCi/L |
| 4793858 | Room 17 | 1.4 pCi/L |
| 4794239 | Gym | 1.3 pCi/L |
| 4794336 | Gym | 1.5 pCi/L |
| 4793927 | Gym | 1.2 pCi/L |
| 4793809 | Gym | 1.2 pCi/L |
| 4793523 | Gym | 1.0 pCi/L |
| 4793943 | Lock off | 2.0 pCi/L |

EIS noted no additional radon measurement requirements for the Myrtle Point High School building based on the analytical test results for the samples submitted for independent radon analysis.

The radon was measured at the Pro-Lab Laboratory located at 1675 North Commerce Parkway in Weston, Florida and Environmental Hazards Services LLC at 7469 White Pine Road in Richmond, Virginia using the liquid scintillation Method (EPA 402-R-92-004).

The selected radon sampler devices utilized at the Myrtle point SD Myrtle Point High School building is described as passive activated charcoal adsorption devices (AC). The selected passive radon tester devices do not uniformly adsorb radon during the testing episode and are not described as integrating devices). The radon samplers were opened on Tuesday, July 9, 2019 and capped on Thursday, July 11, 2019. Radon test results were reported to EIS on Wednesday, July 17, 2019. Radon measurement levels varied from a low concentrations of 0.2 pCi/L at multiple test positions to a single test position reading of 2.1 pci/L at the athletic office per sampler serial No. 4793429. No elevated radon concentrations were detected in the Myrtle Point High School building samplers.

The passive radon samplers were placed in the center and at the edges the all the test areas to include the offices, band room, shops, library, gymnasium, offices, library, and classrooms. The capped radon samplers were packaged; logged on a chain of custody form; and shipped to ProLab Laboratories.

In the opinion of EIS, no additional short term radon retesting is required at the Myrtle Point High School Building. In the opinion of EIS, the satisfactory radon test results are generally indicative of generally satisfactory radon conditions in the functional gymnasium, music rooms, shops, library, kitchen, cafeteria, offices, and classrooms and other student and staff occupied spaces of the subject building and no additional short-term radon testing is required at the school building based on these radon measurement test results at this time. The sample analytical position and result tables are attached in this report.

In the opinion of EIS, no significant data gaps remain concerning radon risk at the subject property based on current analytical radon test results.

RADON

radon is a naturally occurring radioactive gas. Radon gas is an extremely toxic, chemically inert, odorless, colorless, and tasteless naturally-occurring radioactive element having the symbol Rn. Radon has the atomic number 86; an atomic weight of 222; a melting point of -71 degrees Celsius; a boiling point of -62 degrees; and 18 radioactive isotopes. It is derived from the radioactive decay of radium and is used in cancer treatment; as a tracer in leak detection; and in radiology.

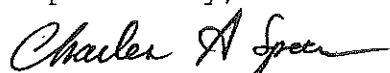
Radon travels through soil and enters the buildings through cracks and other foundation holes. Eventually radon decays into radioactive particles (decay products) that may be trapped in your lungs during breathing. The decay of particles release small bursts of radiation. The radiation may cause lung tissue damage and may cause lung cancer over time. The EPA has noted that there is a risk associated with any concentration level of radon. It has also determined that an action limit of 4 pCi/L is the action limit based on available data. It has been estimated that excessive radon exposure may cause 14,000 lung cancer deaths each year in the United States. The US Surgeon General has issued warnings that radon is the second-leading cause of lung cancer and only second to smoking.

The Myrtle Point High School Building radon measurements varied between 0.2 to 2.1 pCi/L. with an average reading of 0.81 pCi/L. The concentrations of radon in a building are dependent on factors to include the concentration of uranium and radium in the soil; the type of underlying geology; soil permeability; available migration pathways such as subsurface utilities; foundation openings; air temperature and pressure differentials and building ventilation.

Radon may migrate into a study area by either a pressure driven transport or no pressure differentials. The subject school was built on concrete foundation and slab on slab foundations. Radon may migrate through foundations by the availability of expansion joints and cracks in the foundation. Radon may also migrate into a building through basements, utility trenches, pipe runs, HVAC systems, and other building ventilation systems. Radon contributions from building materials off-gassing are not often the source of measurable radon.

In the opinion of EIS, based on actual extensive passive radon testing at the subject buildings no additional limited short term radon retesting is recommended at the Myrtle Point High School Building at this time. In the opinion of EIS, the satisfactory radon test results are generally indicative of satisfactory radon conditions at the Myrtle Point High school building. If there any questions feel free to contact me at (503) 680-6398.

Respectfully,

A handwritten signature in cursive script that reads "Charles A. Spear".

Charles A. Spear
Environmental Professional

July 20, 2019
EIS JOB No. 2019062.elementary radon

Myrtle Point Superintendent
Myrtle Crest Elementary School
908 myrtle Crest Lane
Myrtle Point, Oregon 97458

RE: Short term radon testing of The Myrtle Crest Elementary
School located at 908 Myrtle Crest Lane in Myrtle Point,
Oregon 97458

Dear Superintendent,

This letter summarizes the finding of a short term (48-hour) radon sampling test episode conducted at the subject school property improvements between July 9 and July 11, 2019. The subject school improvements are collectively referred to as the Myrtle Crest Elementary School building located at 908 Myrtle Crest Lane in Myrtle Point, Oregon. The radon test episode was performed by Charles A. Spear, field representative of Environmental Inspection Services (EIS) with no custodian escort through the entire building. **No elevated radon considerations were noted for the July, 2019 radon test results for the elementary school building based on the short term simultaneous test results.**

The U.S Environmental Protection Agency (EPA) and other major national and international scientific organizations have concluded that radon is a human carcinogen and poses a serious environmental health problem. The EPA recommends that schools take action to reduce the level of radon when levels are 4 pCi/L or higher.

A total of forty (40) short term radon test units were placed throughout the Myrtle Crest Elementary School building. No radon measurements approaching four (4) picocuries per liter (pCi/L) were analytically confirmed in any of the radon samplers. A low radon measurement of 0.5 pCi/L was confirmed in one (1) sampler located at room 2. Lower radon concentration levels between 0.2 pCi/L and 0.4 pCi/L were measured in the remaining thirty-nine (39) radon testers placed in all the classrooms, gymnasium, library, and offices. No elevated radon considerations were noted for the radon test results for the Myrtle Crest Elementary school building based on these short term simultaneous test results.

Radon concentration levels have been noted to vary from school to school and also from room to room. All frequently occupied rooms in contact with the ground require testing. This radon sampling episode noted the following;

Total number of testers - Forty(40)
High reading - one -(1) - 0.5 pCi/L - Room 2
Lower readings - thirty-nine (39)- 0.2 -0,4 pCi/L

The average radon Myrtle Crest Elementary School measurement was 0.23 pCi/L with analytical test results varying from a radon low concentration measurement of 0.2 pCi/l to a high concentration measurement of 0.5 pCi/L. No additional short term test radon testing is recommended at this time at the Myrtle Crest Elementary School based on the radon short term analytical test results.

The total of Forty (40) radon test units supplied by Pro-lab were placed within functional administration areas of the Myrtle Point SD-41 school between July 9 and July 11, 2019. The total of forty (40)short term samplers were capped and submitted to Pro-lab laboratories for radon analysis on Thursday, July 11, 2019 and received by the Pro-Lab laboratories on Monday, July 15, 2019. Radon test results were reported to EIS on Wednesday, July 17, 2019. Radon measurement levels varied from a low concentration of 0.2 pCi/L to 0.5 pCi/L. No elevated radon concentrations were detected in the Myrtle Crest Elementary School building radon samplers.

The highest radon sample concentrations between 0.4 pCi/L and 0.5 pCi/L were detected in the following samplers;

| <u>Sample serial No.</u> | <u>Sample location</u> | <u>Sample test result</u> |
|--------------------------|------------------------|---------------------------|
| 4793460 | Room 2 | 0.5 pCi/L |
| 4793663 | Cafeteria | 0.4 pCi/L |

EIS noted no additional radon measurement requirements for the Myrtle Point SD 41 Myrtle Crest Elementary School building based on the analytical test results for the samples submitted for independent radon analysis.

The radon was measured at the Pro-Lab Laboratory located at 1675 North Commerce Parkway in Weston, Florida and Environmental Hazards Services LLC at 7469 White Pine Road in Richmond, Virginia using the liquid scintillation Method (EPA 402-R-92-004).

The selected radon sampler devices utilized at the Myrtle point SD Myrtle Crest Elementary School building is described as passive activated charcoal adsorption devices (AC). The selected passive radon tester devices do not uniformly adsorb radon during the testing episode and are not described as integrating devices). The radon samplers were opened on Tuesday, July 9, 2019 and capped on Thursday, July 11, 2019. Radon test results were reported to EIS on Wednesday, July 17, 2019. Radon measurement levels varied from a low concentrations of 0.2 pCi/L at multiple test positions to a single test position reading of 0.5 pci/L. No elevated radon concentrations were detected in the Myrtle Crest Elementary school building samplers.

The passive radon samplers were placed in the center and at the edges the all the test areas to include the offices, library gymnasium, offices, library, and classrooms. The capped radon samplers were packaged; logged on a chain of custody form; and shipped to ProLab Laboratories.

In the opinion of EIS, no additional short term radon retesting is required at the Myrtle Crest Elementary School Building. In the opinion of EIS, the satisfactory radon test results are generally indicative of generally satisfactory radon conditions in the functional gymnasium, library, kitchen, cafeteria, offices, and classrooms and other student and staff occupied spaces of the subject building and no additional short-term radon testing is required at the school building based on these radon measurement test results at this time. The sample analytical position and result tables are attached in this report.

In the opinion of EIS, no significant data gaps remain concerning radon risk at the subject property based on current analytical radon test results.

RADON

radon is a naturally occurring radioactive gas. Radon gas is an extremely toxic, chemically inert, odorless, colorless, and tasteless naturally-occurring radioactive element having the symbol Rn. Radon has the atomic number 86; an atomic weight of 222; a melting point of -71 degrees Celsius; a boiling point of -62 degrees; and 18 radioactive isotopes. It is derived from the radioactive decay of radium and is used in cancer treatment; as a tracer in leak detection; and in radiology.

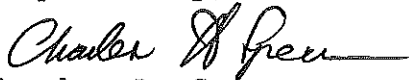
Radon travels through soil and enters the buildings through cracks and other foundation holes. Eventually radon decays into radioactive particles (decay products) that may be trapped in your lungs during breathing. The decay of particles release small bursts of radiation. The radiation may cause lung tissue damage and may cause lung cancer over time. The EPA has noted that there is a risk associated with any concentration level of radon. It has also determined that an action limit of 4 pCi/L is the action limit based on available data. It has been estimated that excessive radon exposure may cause 14,000 lung cancer deaths each year in the United States. The US Surgeon General has issued warnings that radon is the second-leading cause of lung cancer and only second to smoking.

The Myrtle Crest elementary School Building district building radon measurements varied between 0.2 to 0.5 pCi/l. with an average reading of 0.23 pCi/L. The concentrations of radon in a building are dependent on factors to include the concentration of uranium and radium in the soil; the type of underlying geology; soil permeability; available migration pathways such as subsurface utilities; foundation openings; air temperature and pressure differentials and building ventilation.

Radon may migrate into a study area by either a pressure driven transport or no pressure differentials. The subject school was built on concrete foundation and slab on slab foundations. Radon may migrate through foundations by the availability of expansion joints and cracks in the foundation. Radon may also migrate into a building through basements, utility trenches, pipe runs, HVAC systems, and other building ventilation systems. Radon contributions from building materials off-gassing are not often the source of measurable radon.

In the opinion of EIS, based on actual extensive passive radon testing at the subject buildings no additional limited short term radon retesting is recommended at the Myrtle Crest Elementary school Building at this time. In the opinion of EIS, the satisfactory radon test results are generally indicative of satisfactory radon conditions at the Myrtle Crest Elementary school building. If there any questions feel free to contact me at (503) 680-6398.

Respectfully,


Charles A. Spear
Environmental Professional