



RADON WITH THE AIR PROGRAM

During January 2020, the Air Program teamed up with Tribal IT Department and Head Start to conduct radon sampling at Tribal Headquarters and at Head Start. Radon comes from radioactive decay (breakdown) of uranium in soil, rocks, and water. Radon can enter a building via sumps and drains, utility cutouts, cracks in a slab, and any other holes between the soil and the floor, IF there is also a source of radon below a building, AND a pressure differential. It became a health concern when it was determined that radon particles could attach to dust and be inhaled, and act as a carcinogen, though the primary risk of radon inhalation is actually from water containing radon in contact with the air. **Affects on indoor air quality are only a potential health concern if radon is present, and the building is occupied and infrequently vented.** Radon sampling is sensitive to outside air flow, which means that ventilation and allowing exchange with outside air into a building can prevent accumulation of radon.

Radon particles that may have accumulated indoors can be detected using a number of methods, including continuous monitoring (solid state alpha detection/counting), which the Air Program utilizes to sample for radon. Sampling is conducted in accordance with the EPA 2-day test protocol for the Rad7 sampler, including purging and quality assurance steps. Results are compared to the EPA *action level* of an *average* of 4.0 picocuries/Liter of air for the sampling run. Sampling is generally performed in winter when ventilation rates in buildings tend to be lowest for heat-saving purposes. However, there is no required schedule or frequency for sampling. As inclement weather can interfere with sampling, we aimed to conduct sampling in the absence of storm systems, which as of now have levelled off since the start of our 2019-2020 winter.

Radon mitigation systems, which are generally air pumping and sealing systems, are commercially available for use in cases when and where it's deemed necessary and worthwhile to reduce levels, i.e. typically the EPA "action limit", though it can be for lesser levels. Below the action level, mitigation systems are not always determined to be effective. Single-use radon test kits for private use can also be purchased from hardware stores, online stores, or may be available for free during promotional public health campaigns.

Sampling Results

Results for 2020 radon testing at Tribal Headquarters and Head Start, and also for prior testing in 2009 and 2019, are all below the EPA action level of 4 pCi/L. 2020 Averages were: 0.96 pCi/L for Admin Water Quality Specialist Office, and 1.85 pCi/L for Head Start Computer Control Room. 1 test's maximum value was over 3 pCi/L– in the HS Computer room.



Pictures from left: Desiccant is used to reduce humidity in incoming sample air and for a "dry purge" of the ion chamber in the detector; a regular purge cycle is performed between sampling runs; sampler set up to run at Tribal Headquarters; set up at Head Start.

⇒ For questions and information contact the Air Quality Program at 760-784-9308 ⇐