Town Hall - Perry Park

Jan. 15, 2025

Tonight's meeting

How we got here & overview of actions to date

Radium: health effects and exposure

Regulations

Reducing your risks

Questions

Background

- Perry Park WSD is a community water system that uses wells for drinking water.

- Perry Park is required to collect radium samples once per quarter at the entry point that serves the groundwater wells.

- Our role at the Water Quality Control Division is to make sure that Perry Park meets state and federal drinking water standards (also called maximum contaminant levels or MCLs).
  - Radium MCL is 5 Picocuries per liter (pCi/L).

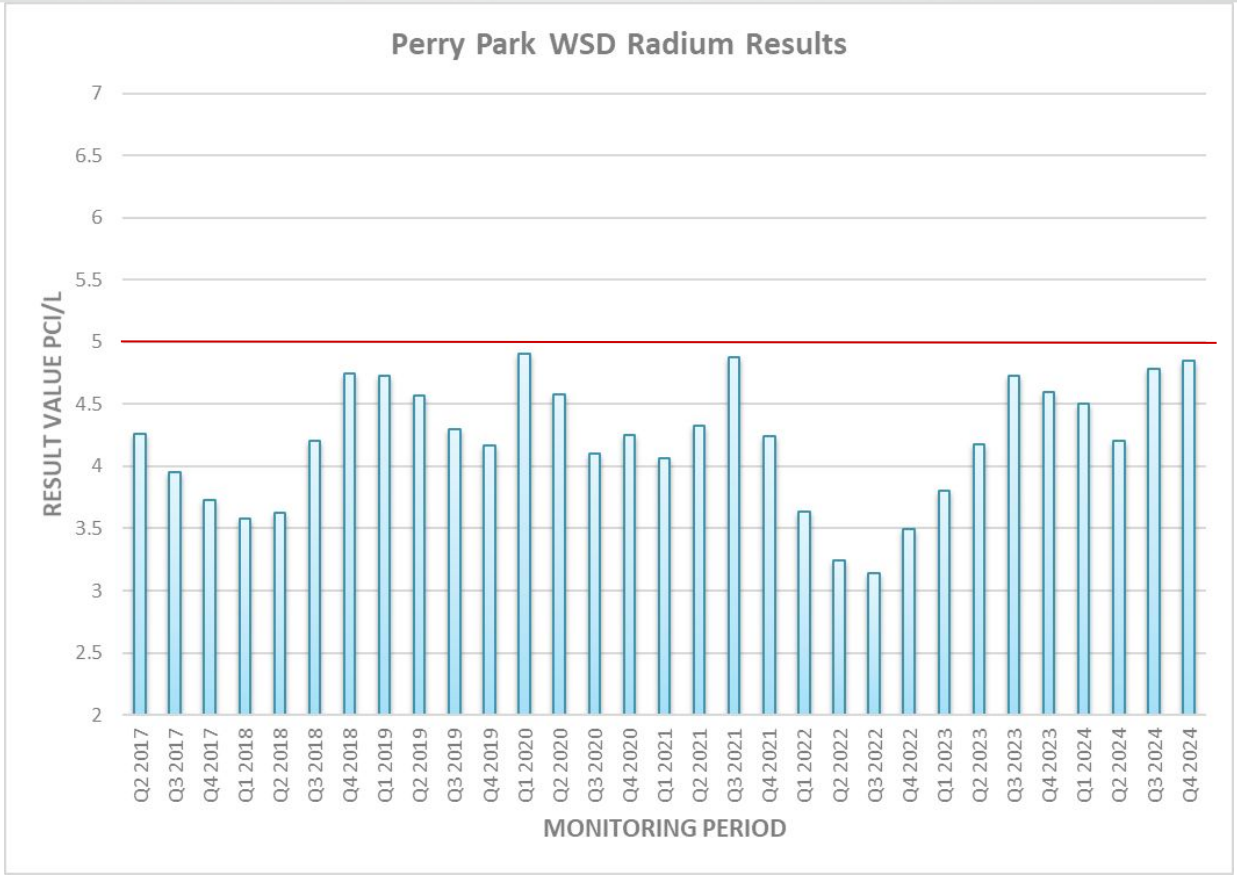
- We determine compliance with the MCL by using the Locational Running Annual Average, which is the average of sample results collected at the entry point over the previous four quarters.

Actions to date

- Perry Park collected a Quarter 3 radium sample in August 2024. The result was 12.9 pCi/L.
  - An MCL violation was issued in September 2024 for exceeding the MCL for radium at 6 pCi/L.
- Perry Park collected a second radium sample later in September. The result was 5.6 pCi/L.
- The division rescinded the MCL violation after a second radium sample collected in September brought down the Locational Running Annual Average. The average for the Quarter 3 results, combined with the previous three quarters, lowered the overall average to less than 5 pCi/L for MCL. As a result, the Department rescinded the violation in October 2024.

Q4 2023	Q1 2024	Q2 2024	Q3 2024	LRAA
3.5 pCi/L	3.0 pCi/L	3.4 pCi/L	(12.9 pCi/L + 5.6 pCi/L)/2 = 9.25	**4.8 pCi/L**

Locational Running Annual Average graph



Actions to date

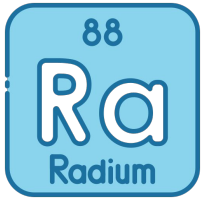
In conclusion:

- The most recent sample was 3.9 pCi/L. The locational running annual average is 4.9 pCi/L. Currently the system has no open MCL violations.

- The department is working closely with Perry Park and their hired engineering firm, TST Infrastructure to help evaluate potential treatment modifications or strategies to help lower the amount of radium in the drinking water.

What is radium?

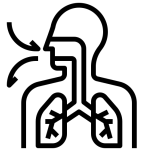
- Naturally occurring element.
- Formed from breakdown of uranium.
- Found at low levels in rocks, soil, water, plants, and air.
- Used as a radiation source for treating cancer and in metals analysis and research.

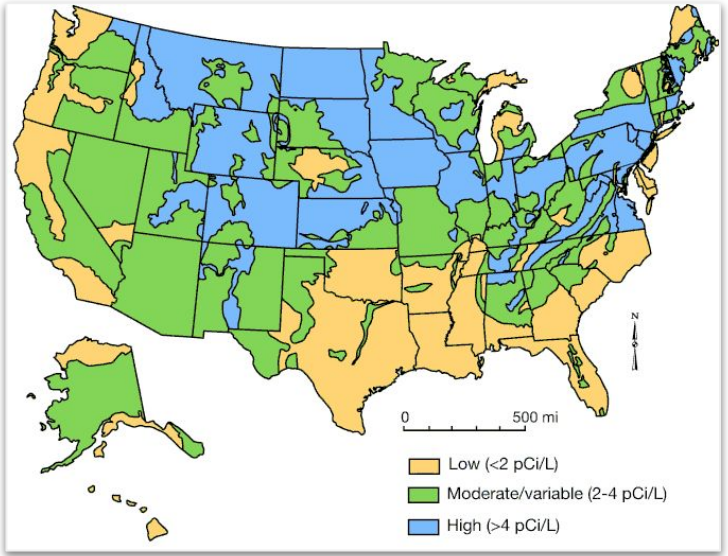


Uraninite crystals
Image credit: Wikipedia

What is radium?

- Radium is present at low levels in the environment, so most people are exposed to small amounts every day.
- Radium breaks down into radon.
- Main exposure routes:
  - Drinking water, or
  - Breathing in radon gas.

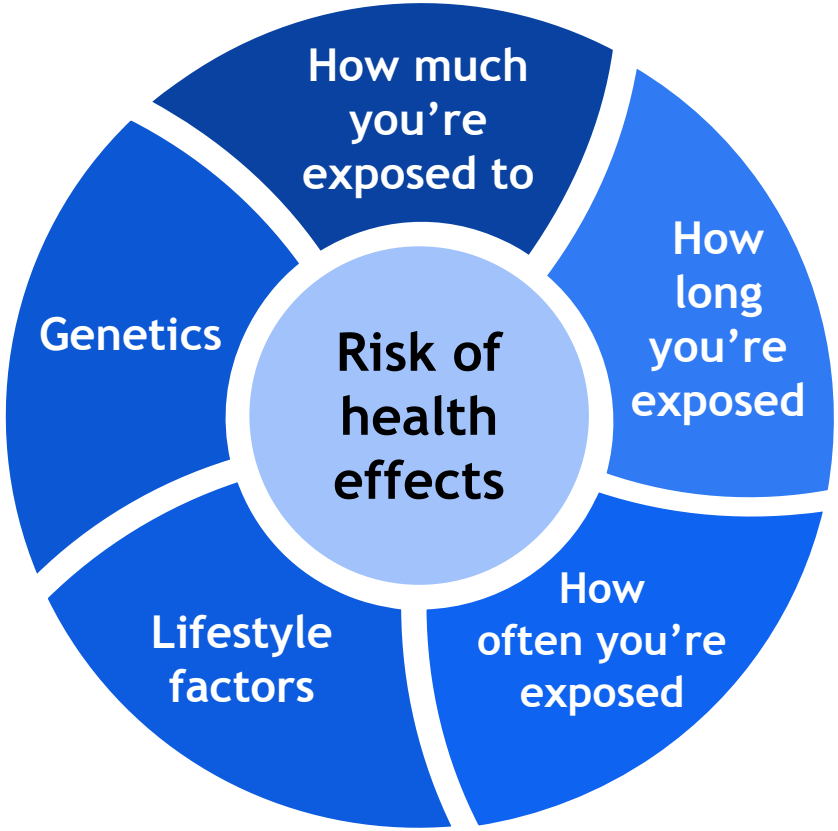




Indoor radon map. Image credit: KS Geological Survey

What are the health effects of radium exposure?

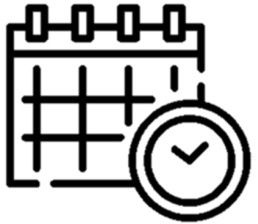
The risk of developing health problems from exposure to a contaminant depends on many factors.



What are the health effects of radium exposure?

- Lifetime exposure to high levels can cause a higher risk of:
  - Anemia.
  - Cataracts.
  - Tooth fractures.
  - Bone and blood cancers.

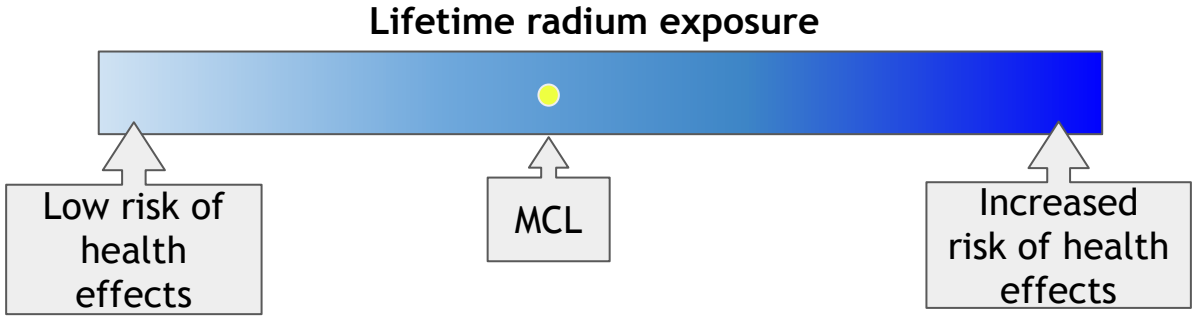
- Higher risk of health effects unlikely from:
  - Lifetime exposure to low levels.
  - Short-term exposure to high levels.



MCLs reduce risk of lifetime health effects

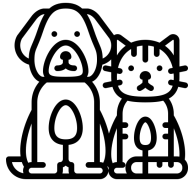
- The Safe Drinking Water Act sets limits (MCLs) on how much of a contaminant can be in public water supplies.

- MCLs are set below the level where we see health effects.



What about pets?

- Pet health effects from drinking water containing radium is not well studied.



- The US Department of Energy has developed levels to evaluate long-term radium risks to wildlife.
  - **For animals, the radium level = 15,000 pCi/L**

- Pets are very unlikely to experience health effects from drinking water containing the levels of radium measured here.

Putting it all together

- MCLs are protective of a lifetime of exposure.
- Short-term exposure to radium above the MCL is unlikely to increase your lifetime risk of health effects.
- Pets are very unlikely to experience health effects from drinking water containing radium at these levels.
- Risk of health effects depends on genetics, lifestyle factors, and how much, how long, and how often you're exposed.
- Lowering your exposure lowers your risk of potential health effects.

Exposure reduction

- Radium breaks down into radon. Test your home for radon!

- If you are concerned about radium in your water, filter the water you use for cooking and drinking.

https://bit.ly/CORadon

- If you're concerned about health risks, talk to your doctor about cancer screening.

Thank you!