

EPA requirements regarding radium in water

Orahood said radium levels in well water cannot exceed 5 pico curies per liter (pc/L). In 2006 Monument's water did exceed this limit briefly and the town temporarily shut down the well as a temporary fix. See www.ocn.me/v17n6.htm#mbot under the section "Contract awarded for Well 9 treatment modifications."

Currently, they are meeting state Health Department standards though trending upward, as are many water systems that rely on water from aquifers, due to the underlying geology. Because the town is currently in compliance, the state cannot require it to explore options to reduce the element at this time. However, she was encouraged that Tharnish was being proactive in trying to reduce radium in the water before the system goes out of compliance by bringing the two water resolutions to the board tonight.

The EPA set federal standards for the maximum contaminant level (MCL) over 5 pc/L in 2001 through an elaborate process that included a review of health information and assembly and evaluation of test results. Benson explained there is a public comments period that includes stakeholder input. Bornstein was concerned that the process 19 years ago might have been too general to be safe.

But Simmons said with regard to radium testing the evaluation was done directly, testing all ages of people to determine the effects of the element. "In this case, because of the interaction with the cell itself, [the level] is thought to be protective of children and fetuses," referencing the 5 pc/L recommendation by the EPA. Based on the Safe Drinking Water Act, if water is under the maximum level, it is safe to drink.

Trustee Ron Stephens asked if bottled water could have radium in it, to which Benson said if the bottler was using well or ground water, there is a good chance there is some level of radium dissolved in it.

Acute versus chronic health effects

Trustee Greg Coopman asked if there is a certain value of radium that constitutes an emergency response. Benson said because this is a chronic contami-

nant that will affect people over a lifetime, there would only be the requirement to make sure the radium in the water was not over the limit. Benson added that for those acute chemicals that can affect people immediately, such as bacteria, there are emergency values used to stem an outbreak to reduce symptoms quickly.

Ingels explained the following:

- Acute or short-term health effects are caused by components in water that can make you sick immediately or within a day. For example, if someone ingests giardia parasites by drinking creek water, symptoms of the intestinal infection will be quick to develop and must be treated as soon as possible. Renewable water or surface water typically contains these types of substances. These water sources are not usually susceptible to radium.
- Chronic or long-term effects come from elements that if drunk over a lifetime, roughly defined as 70 years, could cause disease. Well water, or deep ground water, is not susceptible to giardia parasites, but does contain other chemicals dissolved in it because of the interaction with the rocks underground. Radium, uranium, gold, and other components in the rocks leach into the water over time. Monument uses all wells and no surface water.

The EPA regulates 96 compounds in drinking water, including radium.

Well water versus surface water

Ingels reminded the audience we're a mining state, saying there are radium veins, uranium veins, and gold veins in rocks. When people put down wells, there's a chance there could be any of these elements that leach into the water. There isn't a special meter that tells you where to sink the well—"You get what you get," he said.

Mayor Don Wilson reminded the board there is only one well with radium exceedance issues, and Public Works has found the current dilution plan is not working.

Trustee Laurie Clark asked about the pros and cons of renewable water. She highlighted renewable water as having less chance of radium in surface water, asking, "What is the cleanest,



Above: At the Monument Board of Trustees meeting March 2, Commander Jonathon Hudson, Sgt. Ryan Koski, and Officer Bradley Kunkle took their oaths of office for the Monument Police Department. Chief Sean Hemingway administered the oaths. From right are Town Manager Mike Foreman, Hemingway, and Hudson and his extended family. Photo by Allison Robenstein.

purest water to provide to our citizens?"

Note: The town currently does not have any sources of renewable water, but the subject has been discussed at length by the BOT many times in the last several years. See www.ocn.me/v17n3.htm#mbot0206, www.ocn.me/v17n10.htm#mbot0918, www.ocn.me/v18n1.htm#mbot1204, for examples, or search www.ocn.me for keywords.

Ingels explained again how surface water has other contaminants that must be removed before it is considered drinkable. Clark said she would like to pursue surface water options, but Wilson said he wasn't interested. The town has well water now, and she asked if they should evaluate renewable water options because they wouldn't have the issue with radium. Benson said, "You're trading one risk for another."

Tharnish told the board there is money in the 2A Water Acquisition, Storage and Delivery (ASD) fund to pursue renewable water options, but the only option now is the Northern Monument Creek Interceptor Project that will include transporting wastewater to Colorado Springs Utilities for cleaning. The project is only in the discussion phase, and it must be determined how pipes would be installed and how the project would be financed. The other side of this, a method for returning the clean drinking water back to the respective municipalities, has not yet been determined.

Tharnish said it might be five years before anything is installed.

Radium removal procedures

If Monument's radium levels are exceeded, Orahood said, the town would be required to hire a third-party engi-

neer who would analyze its system and explore viable options for reduction of the radium. These would be submitted to CDPHE as formal options, which it would review.

Orahood told the audience "We don't recommend [solutions] but allow the water department to have an engineer to do a full analysis and look at all viable options."

At this meeting, Public Works Director Tom Tharnish was introducing a resolution for a third-party engineering firm to create a technical memorandum before the radium levels are over the limit.

Trustee Jeffrey Bornstein asked Benson, "If we're looking at a solution, we can actually before we approve a solution and spend dollars, we can give it to you to look at, you can say you want to look at a or b," to which Benson agreed saying "that would be CDPHE's role."

Design and engineering services to reduce and/or remove discharge of well 3/9

Tharnish brought a resolution to the board to approve engineering services from Forsgren Associates Inc. to perform an extensive study of the rising levels of radium at a cost of \$81,360. Orahood and the other experts commended the town for taking a proactive approach rather than waiting until the well is out of compliance. Tharnish said if this resolution passed tonight, this is the first step of design.

Twelve firms applied to the initial request for quotes, and these were whittled down to five firms that then replied to the request for proposal (RFP).

Bornstein said, "I'm [in] full support, I'm there," noting this isn't a dollar issue. "My priority is to get it fixed for the residents," he said asking, "Do you know what system you want?" Tharnish said the engineering firm would give them the system options once their analysis is complete. "They let us know the best available [solution], knowing what those systems are and consulting with engineers, and evaluating water, will give us our options," Tharnish said.

Again, Bornstein said, "You've got my support 300%" but asked if there is already a solution ready, perhaps misinterpreting Benson's claim that the town could propose a solution to the CDPHE without the analysis first.

Bornstein seemed to not be hearing Tharnish as he asked, "Is it a fair assumption that whatever you decide, you will not be going to the people you brought in tonight?"

After voting against the resolution, Bornstein said, "I'm trying my best, I wanted to pass this tonight. I'm not giving a ... damned blank check for \$700,000; I thought there would have been a system in place rather than the research."

Coopman said he heard the experts saying the town doesn't have to do anything different than what it's already doing, because it's in compliance. He had several reasons for ultimately voting against the request, including:

- He said he was concerned about

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