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Elburn looks at new radium solution

Company's technology may remove radium from water without killing taste.

by Jennifer DuMont

A recently developed technology may prove to be the solution to Elburn's radium problems.

A half-completed study shows that, so far, Colorado-based Water Remediation Technology (WRT) has pioneered a process to resolve the radium-removal issue.

The new technology uses columns filled with a material that collects radium as the water runs upwards, through the columns. Once the water emerges from the columns, it is cleaned of radium to Illinois Environmental Protection Agency (IEPA) standards.

Once the media is used up, which is projected to happen once a year, WRT collects, transports and disposes of the media, which is classified as low-level radioactive waste. The solid waste is transported to a landfill in Hanford, Wash., where WRT has a contract.

Ron Dollar, vice president of marketing for WRT, said the benefits of this process over other methods are numerous. The most obvious benefit is that the waste generated is a solid, rather than a liquid, and WRT will dispose of the material. In addition, there are no other treatments necessary, and the taste of the water would not change. Finally, any exposure to radium is limited, there would be no acute radiation hazard, and WRT guarantees the performance of the process.

"This seems to be the cleanest approach," said village trustee Jeffrey Metcalf. "Where have you been for so long?"

Dollar told the board the technology has only been in existence for the past two years.

Radium is a naturally occurring, unstable chemical compound that could cause cancer over a prolonged period of exposure. The IEPA lowered the amount of allowable radium in community drinking water to five picoCuries per liter. The IEPA set a deadline of Dec. 7, 2003, for the nearly 100 communities in Illinois to meet the radium requirement.

The village has already informed the IEPA that it would be unable to meet the Dec. 7 deadline, and is now required to meet benchmark deadlines that show the village's progress.

WRT completed a compatible pilot plant study in Oswego, and, having received IEPA approval, will proceed to install the columns at all five Oswego wells by Nov. 1. WRT is running a similar study in Sycamore. WRT is also able to remove arsenic, barium, ammonia, chromium and uranium in municipal water supplies.

If the village hires WRT, it will enter into a long-term, typically 20-year contract with WRT. By using such an extended contract, the village is able to defray the start-up cost of the program over a long period of time. WRT is also able to reserve as much material as the village will need for the length of the contract and guarantees it can handle the waste generated for the full term of the contract.

The village will have to construct a building to house the operation. Once completed, WRT will design and deliver the equipment, provide the material, conduct the material exchange and disposal when needed, and retain complete ownership of the radioactive waste at all times.

Ion-exchange, the process the village had been leaning toward after examining numerous options, would cost $4.5 million, which is half as expensive as the lime softening process, which was also reviewed. Ion-exchange works, but adds sodium to the water, affecting taste and adding a corrosiveness factor.

The costs of WRT's treatment option will be available the next time the company appears before the Village Board. At that time, WRT will have completed the final part of the pilot plant study and be able to show its results to the board. Then, WRT can have the treatment up and running in 12 weeks after receiving IEPA approval for Elburn.

WRT charges a per-month fee with an agreed minimum useage amount, with additional useage billed on a cost per 1,000 gallons of treated water. When WRT provides its figures, trustees will be able to compare and contrast them with the cost of ion-exchange.

"We need to take a look at the cost-benefit ratio," said Village President Jim Willey. "Here is an opportunity to capture radium at the well site and dispose of it. It sounds like it would save us cost ... This is certainly an issue that is very critical to Elburn."