

# THIOGUARD® TST

EFFECTIVE, ENVIRONMENTALLY SAFE TOTAL SYSTEM TREATMENT FOR MUNICIPAL WASTEWATER



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At **THIOGUARD®**, we are concerned with all things magnesium, so when we run across an article like this one in National Geographic, we want to share it. It's a lighthearted story about a special water fountain in Florida, and the health benefits of magnesium in drinking water. We hope you enjoy the article.



## Florida's Radioactive “Fountain of Youth” May Prolong Life

Five hundred years after Ponce de Leon explored the area, locals swear by an artesian well with unusual properties.

BY JACKIE SNOW | JULY 25, 2013

Five hundred years ago in June, the Spanish conquistador Juan Ponce de Leon started his journey back to Puerto Rico from Florida after becoming the first European to land on mainland America. After exploring the east coast of Florida, he circled the peninsula and explored the west coast, including modern-day Charlotte Harbor, most likely the location he chose for his second voyage.

According to legend, the explorer set out in search of the fountain of youth, a fabled stream that would extend the life of anyone lucky enough to drink from it.



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Thanks to the myth of Ponce de Leon's trip, Florida—known for its large population of retirees—is now awash in "fountains of youth." Dozens of bodies of water claim the title of the one legendary fountain, from mineral springs to deep-water wells, not to mention water from a variety of sources that is piped into various built structures.

Only one, however, is known to be radioactive. And, oddly, it might be actually extending life.

In Punta Gorda, a town on Charlotte Harbor, a blocky, green-tiled fountain abuts an empty lot near the harbor. A spigot juts out near the top to release water from the artesian well below. Each of the four sides features a picture of a ship, a tribute to Ponce de Leon.

On the side facing away from the street, a public health notice warns that the water "exceeds the maximum contaminant level for radioactivity."

The water from the well is also heavy in sulfates, which give it a distinctive smell of rotten eggs. This hasn't stopped the locals from drinking from it regularly.

"I drank out of that well every day," said Gussie Baker, a resident of Punta Gorda for all of her 78 years.

Baker used to live down the road from the Hotel Punta Gorda, whose guests would frolic in a pool filled with water from the same aquifer. Baker learned to swim in the pool and passed the fountain on her way to school.

"I love artesian water," she said. Baker doesn't live as close to the fountain anymore, but says she would drink it if she were nearby.

Punta Gordians proudly declared the existence of a rejuvenative fountain as far back as 1894. In 1926, they mounted a collection drive to pay for the stout little structure that stands to this day. At the height of its popularity, in the mid-20th century, the handle on the tap had to be replaced every six months.

## Radioactive Water

The environmental movement threatened to put a stop to the locals' enthusiasm for the fountain. In 1974, Congress passed the Clean Water Act, requiring the Environmental Protection Agency to determine safe levels of a variety of contaminants, including radium. All public water sources were to be tested.

Punta Gorda's water clocked in at 9.2 picoCuries of radium-226 isotope per liter when it was tested in 1983. This exceeded the recommended radium limit, set at 5 picoCuries per liter.

As a result, in 1986, the city council mulled plugging the well, moving the fountain, and hooking it up to city water. But locals fought back.

"They've tried several times over the years to close it down, to seal it up, to move it or hook it to the city water, and

the public has always defeated that," said Wilson Harper, a 71-year-old former water utilities supervisor better known as "Water Bill."

"The last 15 years it's been as quiet as a church mouse," he said.

Lindsay Harrington has worked across the street from the fountain in a real estate office and watched the comings and goings since 1997.

Visitors "usually come with lots of plastic bottles, or big plastic jugs that hold maybe five or ten gallons," he said.

"We did have an occasion where a gentleman would wash his car there, and I always thought maybe he was hoping it would lengthen the use he would get out of it," he said. "It was his own automobile fountain of youth."

Radium shows up in 3 to 4 percent of water around the country, according to a recent study by the United States Geological Survey. Many areas have no radium in their local water. Radium mostly turned up in places that had certain rock formations with particular water chemistry that created the perfect radium sink. Florida made up the third most likely area in which to find radium-laced water.

Zoltan Szabo, a co-author of the study who has worked at the United States Geological Survey for 28 years, explained that Florida's water is frequently encased in limestone, which doesn't

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absorb or store radium. "It's like a bad paper towel," Szabo said of the common Floridian rocks.

Artesian water supplies are especially low in oxygen, which also helps draw radium out of the water. Szabo hasn't looked at the Punta Gorda water supply in particular but says the levels of radium at which the fountain tested are not especially dangerous.

The EPA's recommended levels are very conservative, Szabo said, and are based on drinking a liter a day for 70 years. Even if that was the amount and length of time someone drank the water, the chance of getting cancer is still low, Szabo said, in the range of 1 in 20,000.

"You're taking a quantifiable risk," he said. "If you're smoking a cigarette, you're taking a quantifiable risk. Probably more than drinking that water."

## Beneficial Magnesium?

But radium isn't the only thing that turns up in the water. In fact, a much more humdrum ingredient might hold the secret of its appeal. The water from the aquifer is high in magnesium, the second most common mineral in the body after calcium.

More than 80 percent of Americans are deficient in magnesium, which helps the body regulate heart muscles and control high blood pressure. The World Health Organization recommends that

drinking water contain at least 25 milligrams of magnesium per liter, and a U.S. Academy of Science study from 1977 found that 150,000 deaths a year in the United States could be prevented with additional magnesium in water.

According to Carolyn Dean, author of *The Magnesium Miracle*, the fountain's 46 ppm of magnesium puts it on par with other mineral waters like San Pellegrino.

The compound magnesium sulfate also makes an appearance in the water. It's better known as Epsom salt, which has been used in baths to ease aches and pains for years.

Magnesium is regularly removed from many bottled waters by a process known as reverse osmosis. And the fluoride added to many public water supplies counteracts magnesium, too.

Magnesium is especially good for older people: Magnesium deficiency increases with age as the body stops being as efficient in absorption, and many drugs senior citizens take interfere with the body's ability to digest magnesium.

"Water Bill" Harper has noticed that the fountain is especially popular among Punta Gorda's older folk.

"One of the problems with city water is we have to maintain a chloride disinfection. It makes everything taste funny," he said. "The people have learned they can go down and take

that water, which is not chlorinated, and let it sit in the refrigerator.

"It's tasty; it has no reaction with any of their medication. Also, [magnesium sulfate] keeps you regular."

## Testing the Water

To Harper's knowledge, the fountain's water has not been tested for at least 25 years—although the EPA recommends biannual testing.

When this reporter sent the water off recently to be tested, it got a reading of 14.4 picoCuries per liter, plus or minus 6.4. This is, according to Szabo, within the range of what showed up in the previous test. According to the EPA website, zero is the goal for radium levels.

Between this warning and the ubiquity of bottled water, the fountain is much less popular today. Harrington says days will go by without him seeing anyone at the fountain. But there are still some dedicated drinkers.

Margaret Baumherdt has been drinking from the fountain since 1967, years before any warning went up. Baumherdt, who is now 88, moved to the area when she was in her early 40s and remembers having to wait in line to drink the water.

She gets her daughter to drive her to the fountain from her home in nearby Port Charlotte, the town across the harbor, and fills up as many as 40 gallon

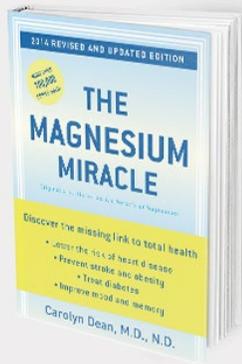
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jugs at a time. She drinks the water exclusively and even uses it to cook meals like spaghetti. Tap water's chlorine content doesn't sit well with her. The fountain water, however, is just right.

"I love the taste," she said.

## ADDITIONAL RECOMMENDED READING



“According to Carolyn Dean, author of *The Magnesium Miracle* the fountain's 46 ppm of magnesium puts it on par with other mineral waters like San Pellegrino.”

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