

Reducing fluoride levels in water part of larger effort in Ranchos Valley

By J.R. Logan, jrlogan@taosnews.com

The Taos News, 8/25/2016

Andrew Chavez says it's easy to tell which people in Llano Quemado have a lot of fluoride in their drinking water.

"I used to live down this road and my teeth were completely brown," he says, driving past old adobes and mobile homes that flank State Road 382. If you've got brown teeth, he says, you've got fluoride.

Many people living on the south rim of the Ranchos Valley have had naturally occurring fluoride in their drinking water for generations. Some wells have a lot. Some don't.

Chavez is part of the Llano Quemado Mutual Domestic Water Consumers Association (LQMD) — a tiny, independent utility that serves about 800 people and, until recently, generated about \$42,000 a year in revenue from customers.

Regulators have no authority over private wells, but a public water system is subject to water quality standards set by the U.S. Environmental Protection Agency (EPA). As far back as 2003, state records show that LQMD has had fluoride levels above allowable standards.

At the moment, the EPA requires that public water systems have fluoride levels no higher than 4 milligrams per liter (mg/L), though it recommends that levels not be above 2 mg/L.

High amounts of fluoride are tied to skeletal fluorosis — a condition that causes pain and tenderness in major joints. Even lower levels can cause tooth discoloration and tooth pitting, the agency says.

State records show water samples taken from the Llano Quemado system since 2012 have had fluoride levels between 3.16 and 5.85 mg/L. The most recent sample — taken this April — had 4.41 mg/L.

Trial and error

For years, the LQMD relied on two wells for water. Water from the wells was pumped uphill to two water tanks that stand near the community center. The same pipe that carries water to the tanks also carries water back to users.

To get fluoride to an allowable level, the system decided to build a larger tank that would blend water from the two existing wells with water from a new well. The new well was drilled near the tank so water wouldn't have to be pumped uphill.

Chavez says the association consulted with experts on where to drill, but he says it was impossible to know what would be found.

"It was anybody's guess," Chavez says.

About 1,200 feet down and \$300,000 later, association officials and drillers found water. But the results weren't good. Fluoride levels from the new well were right at the EPA limit. It wouldn't help the system get back in compliance.

The mutual domestic association took on a \$2 million loan from the U.S. Department of Agricultural Rural Development to pay for the improvements. To cover the loan, the system's volunteer board approved a rate increase that doubled monthly water bills.

With a dud well and the project already over budget, Chavez says he went door to door to homes with private wells in the area, asking if he could test their water for fluoride. The association had to drill another well with better water and found it about a mile down the valley – in an area close to the highway.

Another well was drilled — this one just 320 feet down and at a cost of \$70,000 — and it hit water with fluoride levels at just 0.8 mg/L, Chavez says.

Solutions

The plan now is to pipe water from the new well to the new tank, where it will be blended with water from the other wells to meet EPA standards. A separate line will carry water from the tank to homes. Chavez says the 1,200-foot well by the tank could be used if fluoride levels are diluted with cleaner water.

The association plans to turn the new system on Sept. 30. Once all improvements are finished, Chavez says the entire project will be able to accommodate another 800 people.

Resolving the fluoride issue is one of the LQMD's goals. Chavez says he would like to see more cooperation and sharing of resources among other mutual domestics in Talpa and Ranchos de Taos, as well as with El Valle de los Ranchos Water and Sanitation District.

At the moment, residents in the Ranchos Valley are served by this patchwork of water systems. Chavez and other mutual domestic members say sharing funding and staff would lower costs while improving efficiencies.

The LQMD is already providing water (with fluoride exceedences) to El Valle customers on the west side of State Road 68.



Andrew Chavez explains how existing tanks supply water to about 800 people in Llano Quemado. He is part of a small domestic water association that recently spent more than \$2 million to reduce naturally occurring fluoride levels that exceeded federal standards.

J.R. Logan

Copyright (c)2016 The Taos News 8/25/2016

Powered by TECNAVIA