



# YOU'VE GOT GAS

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Back in early November, I received an urgent text from my Niece. She was in the process of having a new well drilled, her original well was losing capacity during the warm months of summer. She connected a temporary feed from the barn which was on its own well a couple hundred feet away. This was done while the new well was being drilled. I was sent a video showing a cloudy glass of water. As the water sat it quickly cleared from the bottom working to the top until the glass was clear (photo1). What is it? She asked. My response was, you've



Photo 1

got gas. Her, knowing my wry sense of humor paused, trying to come back with a witty response. I went on to explain to her, what you are seeing is methane gas being released from your water. Is it harmful she asked? Thus, began my research.

According to the Encyclopedia Britannica, Methane is an "odorless, colorless gas that occurs abundantly in nature. Methane, a Hydrocarbon is among the most potent of greenhouse gases." Methane may occur in a water well due to natural conditions or it may enter a well due to human activities including coal mining, gas well drilling, pipeline leaks and from landfills. Methane is a colorless, odorless, tasteless, and combustible gas. Methane can be produced naturally by subsurface bacteria and decaying organic matter. It can also leak from underground storage fields and be produced in landfills. Just how does it get into the water? As the gas works its way to the surface it may dissolve in ground water, if this ground water source is used for drinking water it can enter your home.

Groundwater in wells maintains a constant 50°F which can contain up to 28mg/L of methane. As temperatures increase and pressures decrease methane is released. Once the water reaches 58°F and reaches surface pressure it releases most of the trapped methane. A well vent cap will help to release the gas. In a municipal well where the temperature does not rise above 58°F, the methane

will stay in solution and be released in the clear well or through a faucet inside a structure.

How much is too much? Methane forms an explosive mixture in air at a concentration of 5-15 percent by volume. Wells with concentrations above 28 mg/L should take immediate action. Concentrations from 10-28 mg/L should monitor regularly and consider action to reduce this level. Below 10 mg/L is generally considered safe but should still be monitored regularly.

How do we remove this methane? The most common way I have seen is through aeration, or air stripping. I spoke with Bryan Luden, President of Tri-County Water about their project in Holland, NY, that they call an Air Injection Bubbler. This project started well over a year ago but due to Covid-19 the completion date has not been determined. All of the parts are in their PA warehouse with the exception of the tanks



Photo 2

nozzles. Air containing methane is released to atmosphere. Tri-County works with individual homeowners and municipalities with portable trailer (picture3) units that can be used for short term treatment and permanent

the exception of the tanks which are at the well-site (photo2). Bryan stated that their approach to methane is to inject air into the water inside a tank through an air injection bubbler not through spray



Photo 3



Photo 4

structures some even solar powered (picture4). On completion Holland's methane level will be reduced from near immediate action level to near non detect level. I hope to follow this to completion. At the time of writing this they are awaiting final DOH approval of the plans and completion of the installation.

I hope to see you in my travels. **Quality on Tap!** 💧💧💧