

Spring water ... a natural alternative to tap water

By BOB MONTGOMERY
Mercury Staff Writer

POTTSTOWN — It is generally accepted that spring water beats municipal water for taste and purity. Certainly, spring water has gained its spot on grocery store shelves in recent years, even if it does cost almost as much as a gallon of gasoline.

While much of the growth in the spring water industry is attributed to a fear of municipal and private well contamination, spring water is not always 100 percent pure. Since it comes out of the ground, the same as well water, most spring water firms draw their water from areas that are protected from landfills, fertilized fields, and septic systems.

In two samples of spring water tested by The Mercury, the results confirm that the water is better than most water available. But one sample had a trace amount of trichloroethylene (TCE) and the other had a trace of 1,1,1-trichloroethane.

Rockwood Spring Water Co. of Pottstown, which draws its water from a spring on Harmonyville Road, South Coventry Township, had perfect results except for a reading of 0.83 parts per billion of TCE, according to Suburban Water Testing Laboratories of Frederick. Suburban was contracted by The Mercury to test water from 28 locations.

Although 0.83 ppb is a small amount in comparison to the proposed federal maximum level of 5 ppb, it is above the current recommended level (according to U.S. Environmental Protection Agency guidelines) of zero.

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Chlorine kills bacteria, but creates cancer risk

By BOB MONTGOMERY
Mercury Staff Writer

POTTSTOWN — Which is worse — cholera or cancer? That is the scenario facing public drinking water suppliers these days.

Fortunately for those who get public water in the tri-county area, the chance of getting cholera is practically zero, thanks to the addition of chlorine to the water, which kills bacteria.

On the other hand, chlorine reacts with other substances in the water to form compounds called trihalomethanes. One is chloroform, which has been shown to cause cancer in laboratory animals and may be linked to some human cancers.

The results of a three-month investigation by The Mercury show that all of the public drinking sources conform to coliform bacteriological standards as established by the U.S. Environmental Protection Agency.

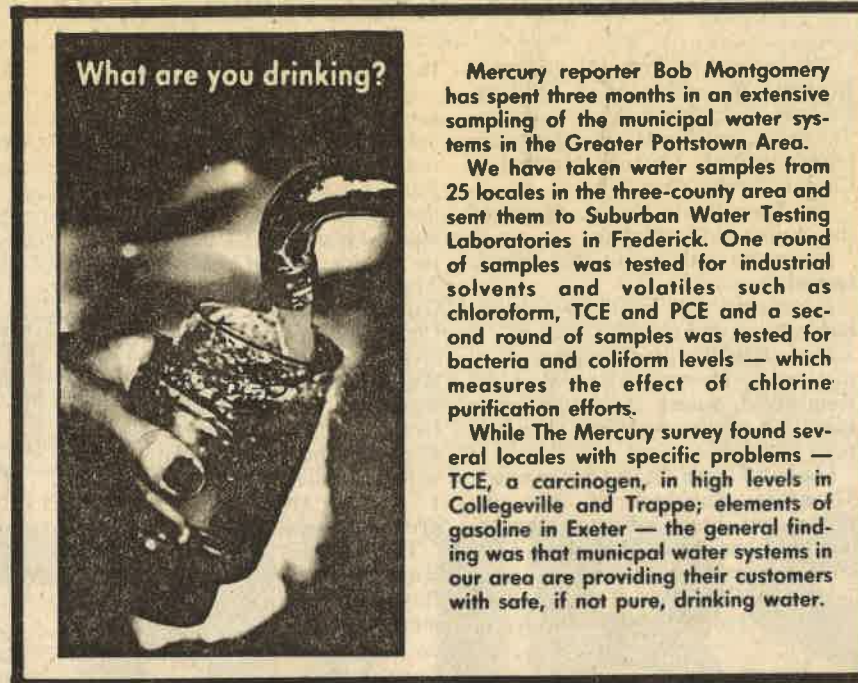
However, one sample in Trappe contained a coliform bacteria count of 2 colonies per 100 milliliters. A second sample was taken, and the test showed zero colonies. If the second one had matched the first, then the reading would be in excess of EPA's standards.

Two readings of 2 coliform colonies in a month exceeds EPA's standards, but one reading does not. The sample was taken from the home of Paul Sharayko, 93 W. Third St., Trappe.

Also, a sample taken from a private well along Schoolhouse Road in East Coventry Township had a level of 2.

"It showed two coliform colonies, which may indicate surface water or waste water is entering the well," said Rick Stump,

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Mercury reporter Bob Montgomery has spent three months in an extensive sampling of the municipal water systems in the Greater Pottstown Area.

We have taken water samples from 25 locales in the three-county area and sent them to Suburban Water Testing Laboratories in Frederick. One round of samples was tested for industrial solvents and volatiles such as chloroform, TCE and PCE and a second round of samples was tested for bacteria and coliform levels — which measures the effect of chlorine purification efforts.

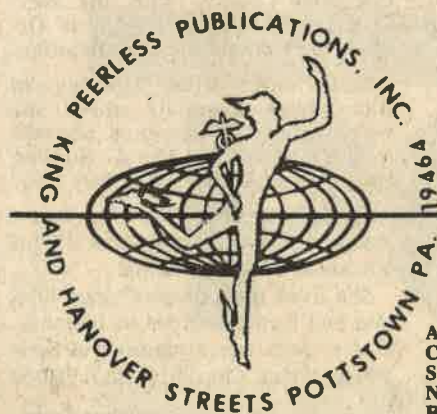
While The Mercury survey found several locales with specific problems — TCE, a carcinogen, in high levels in Collegeville and Trappe; elements of gasoline in Exeter — the general finding was that municipal water systems in our area are providing their customers with safe, if not pure, drinking water.

Kidney failure critical setback for Joe Greis

By FRANK WARNER
Mercury Staff Writer

Heart transplant recipient Joseph Greis clung to life Tuesday night as doctors tried to reverse complications of the Feb. 20 operation the 44-year-old Pottstown man had hoped would restore his health.

Battling kidney failure, Greis, 22



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laboratory director at Suburban Water Testing Labs. "This well should be checked and possibly disinfected. Certainly, additional tests should be done in the near future."

The state Department of Environmental Resources estimates that 60 percent of all private water supplies are contaminated and unsafe for consumption.

Three samples taken from the Schuylkill River — at Birdsboro, Pottstown and Linfield — showed coliform bacteria levels of 28,000; 34,000; and 18,000 per 100 milliliters.

Lab technicians used membranes to trap the bacteria from 1 millileter of water on a filter at the laboratory. It was then incubated and placed on a plate where the coliform colonies were counted.

In the Pottstown river sample (taken at the Route 100 bridge in North Coventry), 340 colonies were found in 1 millileter. Since the standards by EPA are in readings of 100 milliliters, Stump multiplied the 340 by 100 and came up with 34,000.

And since none of that coliform bacteria was found in tap water samples from Pottstown, Stump reasoned that the Pottstown Water Filtration Plant was doing an excellent job in disinfecting the water.

"Chlorine is responsible for doing this great service for us," Stump said. "Chlorine, however, has a bad side effect. In the 1970s it was discovered that when chlorine was added to water, it reacted with natural organics in the water and produced trihalomethanes, primarily chloroform — a known carcinogen.

"Chlorine was found to be like a two-edged sword, cutting down bacterial levels with the forward swing and then swinging back with a cancer risk and the possibility of some unknown side effects."

Which brings us to the trihalomethanes, a group of four chemicals — chloroform, bromoform, bromodichloromethane, and chlorodibromomethane — formed when chlorine reacts with natural organics in water.

Of the four, chloroform, bromoform, and bromodichloromethane are known cancer-causers, while chlorodibromomethane is not carcinogenic.

If the total of all four is 100 or more on a regular basis, then the water supplier is in violation of EPA standards and may be required to install a carbon filter, which would take out most of the chemicals.

"Most places take the average for the year," ex-

plained Stump. "It's more of a cumulative effect than an instantaneous effect. You might get a reading of 120 once and 50 or 60 with the rest. That's generally no problem."

While none of samples tested by The Mercury exceeded 100, some levels were considerably higher than trace levels.

In Phoenixville at the Rich Kirkner residence, 241 Washington Ave., 43.84 parts per billion of total trihalomethanes were found. Of that, the chloroform count was 36 ppb.

But the highest amount of total trihalomethanes — 48.6 ppb — was found at the Charles Pitchford residence, 744 Church St., Royersford. That sample contained 31 ppb of chloroform, 12 ppb of bromodichloromethane, and 5.6 ppb of chlorodibromomethane.

Other areas that showed varying amounts of total trihalomethanes were Spring City (which gets the same water as Royersford), 37.9 ppb; Boyertown, 30.32 ppb in one sample and 20.78 ppb in another; East Greenville, 14.3 ppb; and Birdsboro, 11.9 ppb.

The chlorine reading can indicate if bacteria is present. If a source continually gets readings of zero, then the chances increase of bacteria being present. Readings of 0.5 to 1.0 milligrams per liter mean that there is adequate chlorine to kill the bacteria, yet not too much to cause a noticeable odor or taste.

"If you get 1.5, it will smell like chlorine, but it won't be harmful," said Stump. "But the trihalomethanes will be higher. It shouldn't be zero. It means they're not adding sufficient chlorine. The farthest end of a system must have enough chlorine in it."

Stomach disorders are the general result of water containing coliform bacteria. Years ago, outbreaks of typhoid fever and cholera were the result of bad drinking water. Back then, there were no easy ways to test for bacteria content.

"Coliform is a group of bacteria found in the intestines of warm-blooded man and animals" said Stump. "We should not be finding it in drinking water supplies. When coliform is there, the most common disturbance would be intestinal discomfort."

Some do-it-yourself ways of improving water quality and taste will be discussed in Friday's Mercury.

What are you drinking?



water, and sealed them both. He placed them in a ventilated area, and poured straight TCE (in high concentrations) over each container. The next morning, he opened each container and tested for TCE.

The water from the plastic jug contained 9,700 ppb of TCE, while the water protected by glass measured 1.3 ppb of TCE. Stump concluded that even water that is pure when it leaves the factory can become contaminated when it reaches a person's home, due to contamination from sources within the home.

Mohn said the future for the spring water industry is filled with growth.

"With all the publicity of contamination from landfills, people are very conscious about health today," said Mohn. "They're somewhat suspect of everything they take internally. Spring water is a natural type of alternative to tap water."

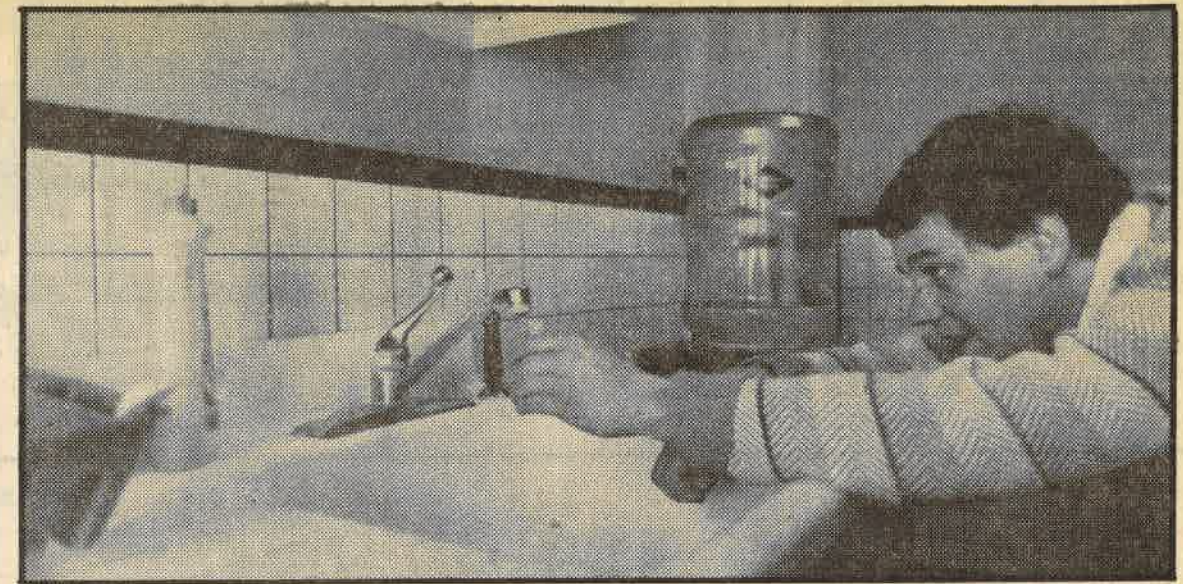
"The whole industry is growing at double-digit numbers. Bottled water is the fastest growing segment of the beverage industry — and that includes sodas, and beers."

"I think it's going to continue for some time," Mohn continued. "Bottled water is constantly in demand. More and more people are trying it. It's hard for people to go back to tap water. And it is reasonably priced. I don't see the price going up. It's a competitive business like any other industry."

Weed said Great Bear has witnessed a fast-paced growth in recent years. "The water market is booming right now, due to plutonium and chemical scares," he said. "From all indications, it's going to continue expanding."

Hennessey also attributed his firm's growth to an increasing awareness of water contamination.

"Business has increased due to an awareness of high quality drinking water," he said. "The industry has tried to promote itself rather than downtalk someone else's. The bottled water industry has been reluctant to bad-mouth municipal water supplies. We try to concentrate on our own quality."



TAPPING THE TAP — Mercury reporter Bob Montgomery carefully gathers a sample of water from a tap in Collegeville for bacteria testing. It turned out that the sample contained no bacteria. In fact, all public water systems tested by The Mercury passed the standards established by the U.S. Environmental Protection Agency.

Mercury Photo by Tom Kelly