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Local News

'They have converted my water to a sewer'

Homeowner blames biosolids for taint

By JIM HOOK
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MONTGOMERY TOWNSHIP -- Don Berkebile listened to the experts.

He tested the water at his kitchen spigot before and after biosolids were spread this spring on a field next to his home on Blue Spring Road.

The difference between the two water samples was dramatic. The sample taken after the spreading of biosolids, or treated sewage sludge, contained excessive numbers of the potentially harmful bacteria E. coli.

"The stuff is being spread within 100 yards of my door," Berkebile said. "They have converted my water to a sewer."

Berkebile, a retired carriage curator from the Smithsonian Institution in Washington, has lived 22 years in the 1770 farmhouse that he and his wife restored.

With a log springhouse in the foreground and Cove Mountain in the background, the stone farmhouse is a picture postcard for Pennsylvania's early farm heritage.

"This was utopia for me," he said. "Everything was perfect for me."

Then his wife passed away before they could entertain friends with period meals cooked at the open hearth.

Then his spring went bad. In May he stopped drinking water from it. He turned off the pump in hopes of keeping polluted water out of his storage tank. Instead, he used a privy and showered on weekends at a friend's home.

After a month he turned the pump back on for the convenience of a toilet. He made the mistake of brushing his teeth at the tap and had diarrhea

Public Opinion/Markell DeLoatch

Pastoral setting: Don Berkebile's 18th-century farmhouse receives water from a spring (in springhouse at right), but the water has become contaminated.

Photo

Public Opinion/Markell DeLoatch

Troubled waters: Retired curator Don Berkebile spent years restoring his farmhouse on Blue Spring Road, and says he does not want to be forced out because of a tainted water supply.

Tainted spring: Inside the springhouse of Don Berkebile's Montgomery Township home is a water supply that he says has become undrinkable since biosolids were spread on a nearby farm in March.

for three days. He still drinks bottled water and gets water from a neighbor for washing dishes.

Finding the culprit

Berkebile believes biosolids are guilty of polluting his spring, but proving it is a difficult challenge.

The results of his water tests may be incriminating, but they don't pinpoint biosolids as the only suspect. Other potential polluters include nearby dairy farms, a neighboring turkey barn and Berkebile's own septic field.

The science is a lot more complicated and expensive than a couple of $21 water tests.

E. coli comes from the intestines of humans and animals.

An $800 test can determine if E. coli contamination originates from humans or animals, according to Bill Smedley, executive director of the environmental group GreenWatch, Jersey Shore.

A test to determine whether human E. coli comes from biosolids or neighboring septic fields would cost about $6,000, Smedley said. The genetic-based testing requires a sample of the sludge and a water sample.

"The burden of proof is on the citizen to prove the source of the contamination," Smedley said.

Spreading biosolids

Synagro Mid-Atlantic followed state and federal regulations when it applied biosolids in April and May on fields behind Berkebile's house, Synagro spokeswoman Sharon Hogan said. Biosolids were applied at the proper rate and buffer areas were obeyed.

The State Department of Environmental Protection, which oversees the permitting process for biosolids, agrees that procedures were followed.

"No violations were noted at the land application site," DEP spokeswoman Karen Sitler said. "We have requested additional information from the land applier, which we have not received."

The fields, rented by Richard Martin from Julia Grove, have an excellent conservation plan approved by the Franklin County Conservation District, according to Hogan.

Both DEP and the federal Environmental Protection Agency have encouraged the reuse of treated sludge from sewage treatment plants since ocean dumping was outlawed in 1992. There are 37 sites in Franklin County permitted to accept biosolids, according to the conservation district.

What are biosolids?

Biosolids are treated sludges from municipal wastewater treatment plants.Rich in organic material, biosolids are recycled by being spread on farmland.

The government recognizes two classes of biosolids for land application -- Class A, which have been virtually sterilized at great expense, and Class B, which have been treated to a lesser extent and at a lesser cost.

Class B biosolids contain some heavy metals and a small amount of pathogens. In recent years, there has been a growing concern among some scientists and citizens that land application of Class B biosolids can be a health hazard to some people.

The state regulates the application of biosolids.

Montgomery Township Supervisors are considering an ordinance that would further regulate biosolids -- the notification of adjoining property owners and the times biosolids can be applied.

Concerned residents have formed the Coalition of Residents Organized for Political Self-expression (CROPS).

Testing results

Homeowner Don Berkebile tested the water at his

Sewage plants pay haulers to take the sludge. Haulers promote the sludge as a fertilizer and supply the biosolids free to farmers.

"The bottom line is the dollar," Berkebile said. "Everybody has the option of walking away from it except the adjacent property owner -- me."

Government cares more about industry than citizens, he said.

Doing something

Residents have called on local governments to deal with biosolids and other farm manure issues. Area townships have been caught between state regulations governing the application of biosolids and citizens pressuring township supervisors to do more.

Citizens have said at public meetings they worry about odors, water contamination and diseases from biosolids. Recent scientific studies have shown a relationship between health complaints and the spreading of partially treated (Class B) biosolids.

"I don't think there's any right way to do land application of sewage sludge," Smedley said. "Sewage sludge should be treated as a toxic waste."

If Berkebile finds the source of the pollution -- whether human or animal -- he could pressure regulators to do something, Smedley said.

Berkebile also could take the suspected polluter to court under the state Clean Streams Law or federal Clean Water Act, according to Thomas Linzey, an envirnnmental law attorney in Chambersburg.

Government regulators however say Berkebile is responsible for his own clean drinking water.

kitchen tap twice this spring -- on May 22 before treated sewage sludge was spread on a field upstream of his spring and again on June 20 after the biosolids were applied. The water passed through an ultraviolet light and filter in both cases.

Bacteria colonies were counted in each sample. Results are reported per 100 milliliters.

Date	Coliform	E. coli
May 22	28.8*	less than one
June 20	more than +200*	32.4*

*exceeds EPA safe drinking water standard

- Coliform indicates that bacteria are present.

- E. coli are bacteria present in the gut of humans and animals. Different strains can cause illnesses.

EPA spokesman John Millett repeatedly recommended that Berkebile protect his water source.

DEP gives up on protecting the valley spring.

"Mr. Berkebile's water source is a springhouse on the bank of a stream," Sitler said. "We do not recommend using such a water supply due to the difficulty of protecting this type of source."

Common contamination

Penn State studies have shown that the shallower a well, the more likely it will be polluted with coliform, according to Tom McCarty, water quality agent with the Penn State Extension in Franklin and Cumberland counties. Among groundwater sources, springs are at the greatest risk of being contaminated because they are at the surface.

About 30% of the people in Franklin County rely on their own water supplies, according to McCarty.

Possibly a third of the wells are polluted with bacteria.

For the past 15 years the Penn State Extension has encouraged well owners in the county to test their wells by annually offering discount-priced water tests. Each year 50 to 100 people test their wells, according to McCarty, and each year 20% to 54% of samples are contaminated with coliform.

This year, 45% of the 96 samples tested positive for fecal coliform, McCarty said. E. coli was found in 15%.

The degree of contamination in Berkebile's spring are likely higher than his test results indicate. He tested his water after it passed through a purification system -- an ultraviolet light and filter at the kitchen sink.

Results of his second test result could be contested. He changed the UV bulb between tests. A newer bulb should kill more bacteria, but he failed to disinfect the three feet of line from the light to the spigot.

Hard to trace

Short of paying for tests that match genetic markers from water samples to sludge or animal manure, Berkebile has little hope of tracking down the polluter.

"Upstream of this springhouse is a watershed of approximately 668 acres that includes farms and livestock operations, as well as fields that have received biosolids," Synagro's Hogan said. "The finger might be pointed at biosolids because biosolids are the new kid on the block, but as I understand it, there have been problems with this water source in the past before biosolids were ever applied."

Berkebile said the small run, Blue Spring Creek, has flooded his spring on occasion. The stream flooded three times this season, but did not get into his springhouse.

Berkebile suspects that animal waste probably contaminates the spring to a degree, but finds the timing of the sudden surge in bacteria too coincidental not to blame biosolids.

Synagro applied biosolids to 90 acres where runoff flows downstream of the springhouse and 10 acres drain upstream, Hogan said. The conservation plan is designed to minimize erosion and potential pollution.

"Class B Biosolids have up to 15 times less fecal coliform bacteria than typical animal manures," Hogan said.

Berkebile took photographs of brown water draining from the fields during heavy rains. He suspects that the contamination runs down a crack somewhere in the limestone geology.

A household septic system is the most common source of contamination to a home water supply, Hogan said.

Berkebile doubts his septic field is the cause. It's on the opposite side of his house, and it was pumped out last year in accordance with township regulations. The nearest neighbor is 100 yards away.

Getting water

Berkebile's recourse may be to install a chlorine treatment system or to drill a well.

"Unfortunately, there's nothing the department can do to help Mr. Berkebile," DEP's Sitler said. "State and federal laws do not cover this. I believe the only recourse for Mr. Berkebile is to consider drilling a well -- something he can protect."

Berkebile said he hired a well driller 33 years ago when he purchased the property. At 300 feet, after spending $1,250, he still had no water.

"I'd like to have a well," Berkebile said, "but I could see me sinking 12 holes and coming up with nothing but rock dust."

He probably could find a buyer for the place, he said, and walk away.

So much of himself is here -- his workshop, the wagons he's restored and log springhouse he built to replicate the original.

"I have spent 33 years of my life and probably $100,000 making this property what I want it to be," Berkebile said, "and at my age (76) I have neither the energy nor the intention to do that, and attempt to start over."

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