

RIVERDALE RESIDENTS HAVE ONLY ONE OPTION

 Posted on Wednesday, October 30th, 2019 and is filed under [News](#). You can follow any responses to this entry through the [RSS 2.0](#) feed. You can skip to the end and leave a response. Pinging is currently not allowed.

State Demands Permanent Solution for Septics

By Rosemary Horvath
Herald Staff Writer

Whatever progress the Riverdale community made by disconnecting failing residential and commercial septic systems, it is not considered a long-term strategy to protect the public [health](#) and the environment, an official with the Department of Environment, Great Lakes, and Energy said Tuesday, following a face-to-face meeting in Lansing with Seville Township officials and their engineering representatives.

[private] In other words, EGLE continues to promote a community-wide treatment system such as a lagoon that is “something long-term and not a temporary fix,” said Cheri Meyer, Acting Supervisor for the Lansing District of EGLE’s Water Resource Division.

EGLE directed Seville Twp to submit a long-term solution by Dec. 15.

This date marks the third deadline for the township after receiving two violation notices since last December. Meyer said correspondence in October indicated the township had hired an engineering consultant and was looking into options for the Riverdale area.

Fleis & VanderBrink engineers, Louis Taylor and Gary Bartow, whom the township hired as consultants, requested the meeting. Township Supervisor Tish Mallory and Township Trustee Doug Brecht attended along with Environmental Health officials from the MidMichigan District Health Department. A legislative aide from District 70 Rep. Jim Lower’s office also attended.

Brecht is a member of a citizens’ committee that has spent most of this summer investigating sources of failing and inadequate septic systems responsible for unlawful discharges of sewage into the Pine River.

Dye tests called attention to faulty systems. Smoke tests showed illegal drain connections. Volunteers recorded septic systems repairs.

Meyer commented that this work is noteworthy “but there are a number of homes on pump and haul” and while EGLE appreciates systems have been capped it is still “a bandaid solution.” She maintained there are many properties left in Riverdale without a permitted system.

There also are residents who have not given access to have their septic systems tested, Meyer was told at the meeting Tuesday. “To get in every home and test every home would be quite an undertaking,” she said.

The Seville group submitted updated data that Meyer said would be reviewed. As for lower levels of E.coli bacteria in water samples taken at different locations in and around Riverdale, Meyer noted that at this time of year results can vary because E. coli dies faster in colder weather.

The Water Resource Division will research funding options to help the community pay for a treatment system. It would be up to the township to consider joining with other nearby communities such as Elm Hall and/or Elwell, Meyer said.

“We are working to help them as much as we can to find funding,” Meyer said.

At the recent MMDHD Board of Health meeting, two members of the Riverdale citizens’ committee confirmed progress had been accomplished.

Township Trustee Doug Brecht said everything is “completely under control” and “moving ahead at a rapid pace.”

Board of Health member representing Gratiot County, County Commissioner Chuck Murphy, said 11 properties in Riverdale identified as polluting are now on pump and haul status. Three new septic systems are being installed, six new permits have been issued, and two are in the process.

Murphy and Brecht said they were told by a health department technician that the soil in Riverdale is suitable for siting drain fields which is contrary to a statement made by EGLE.

According to the health department’s own records dating back to 1964, there were no permits in Riverdale turned down because of soil, Murphy said.

Due to the committee identifying and correcting the problem areas, Murphy pronounced Riverdale no longer has pollution and therefore should not be ordered to build a \$5 million municipal sanitary sewer system.

Mallory informed the township board in September that she was communicating with EGLE and kept the department up-to-date on the strides made in Riverdale.

Water sampling data from August showed levels of E. coli bacteria from raw sewage fluctuated from very low to very high levels and back to low again.

Brecht and Riverdale resident Mikie VanHorn worked with the Michigan Rural Water Association to smoke test drains to pinpoint sources.

Brecht said a culvert at Lumberjack and Fourth Street in Riverdale has been replaced. Considered an “orphan drain,” the township has taken steps to turn it and other drains over to the county Road Commission for regular maintenance.

Becht said the drains had been left unattended to for decades, mainly because neither the township or the county realized their existence.

The Alma Fire Department brought three tankers and more than 10,000 gallons of water to flush out the drains believed to be packed with E. coli bacteria for decades. Township Trustee Marlin Brush, also a volunteer firefighter, was involved in the project.

Assisting the committee have been volunteers from the Healthy Pine River group who functioned as witnesses when samples of water from drains were taken, according to an email from HPR member Jane Keon.

Keon and other members received instructions from Alma College environmental science professor Murray Borrello in the process of field sampling for E. coli. These techniques were applied to the weekly water sampling in Riverdale.

Citizens’ committee chairman, Bob Lombard, said water samples will continue this week. He expects to see an HPR volunteer participate once again to handle the samples and record the information.

Keon also provided a copy of a letter penned by the HPR Board of Directors to EGLE validating the work carried out by the citizens’ committee.

A portion of the letter reads:

“It has pleased our members to see the E. coli counts go down. Even more gratifying is to witness the determination of the residents of the village to stop their pollution of the Pine River. They have found direct connects from several septic tanks and have cemented them off. They have used dye tests, smoke tests and black lights, and have engaged two fire departments to flush drains for them. These activities were undertaken by the concerned citizens, and they are paying for them.

“The aim of Healthy Pine River is to bring our county’s only natural waterway back to health. It is our hope that the efforts of the people of Riverdale will serve as an example and inspiration to others who are polluting the Pine River.

“Now that the E. coli counts have dropped in Riverdale, and now that the Mid-Michigan District Health Department has dropped their complaint against the village, Healthy Pine River recommends that EGLE rescind their intent to install a municipal sewer system in Riverdale. Instead, we hope EGLE will commend the actions of the citizens who corrected the pollution problems in their village.”

Gratiot County Herald

Thursday, October 31, 2019

Septic Summit Next Month Has County Chair for Panelist

**By Rosemary Horvath
Herald Staff Writer**

Environmental and health risks brought on by old and failing septic systems across the State of Michigan will be among the dozen topics discussed at an all-day seminar in Traverse City Nov. 6 that addresses the risks facing communities.

Gratiot County Chairman George Bailey will be a panelist for an afternoon forum entitled Public Policy Options.

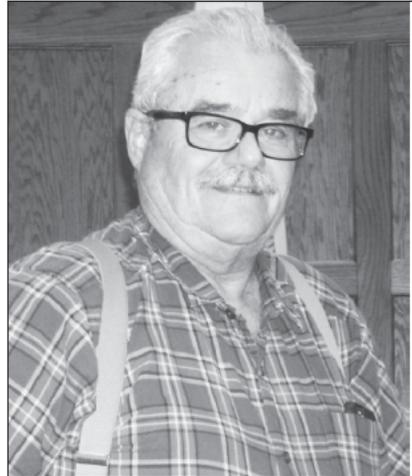
Bailey this year chairs the Board of Health for the MidMichigan District Health Department that serves Gratiot, Montcalm, and Clinton counties.

Last year, the health department attempted to amend existing environmental health regulations to gain better control of septic tanks and drain fields, especially those believed to be draining into public ditches and drains and eventually into waterways.

The proposal was to require a discharge permit for all developed properties and require an inspection once every decade.

However, the attempt was dropped temporarily after a public backlash ensued in all three counties over objections of the cost. The health department is currently working on another tactic.

Non-profit organizations such as FLOW, For Love Of Water, the Michigan Environmental Council, and five other groups are sponsors of the septic summit that takes



BAILEY

place at Hagerty Conference Center from 10 to 4 p.m. Registration fee is \$25 and \$30 at the door.

Another participant will be Jon Beard, Senior Consultant with Public Sector Consultants, who will participate on a panel addressing the question Where Do We Go From Here?

Beard co-authored the 2018 analysis Failing Septic Systems in Mid-Michigan, prepared for the Clinton Conservation District. The report was the basis of the health department's proposal.

Bailey functioned as a committee member along with representatives of local government, business, real estate, finance, and agriculture.

The report confirmed that human sewage from failing septic systems is a significant source of contamination in the three counties.

GRATIOT'S UNVACCINATED KINDERGARTENERS LOWER THAN STATE AVERAGE

 Posted on Wednesday, November 6th, 2019 and is filed under [News](#). You can follow any responses to this entry through the [RSS 2.0](#) feed. You can skip to the end and leave a response. Pinging is currently not allowed.

Waiver Rates in Some County Schools Exceed National Norm, CDC Says

By Emma Selmon
Herald Staff Writer

Last year, Michigan had a higher rate of unvaccinated kindergarteners than most states with an average of 4.5 percent of children acquiring vaccine waivers, according to the Centers for Disease Control and Prevention (CDC).

And although Gratiot County's overall rate — less than 3.3 percent — is lower than the state average, some schools have kindergarten vaccination waiver rates higher than the national average of 2.5 percent.

So what does this mean for Gratiot County?

According to Dr. Jennifer Morse, medical director of Mid-Michigan District [Health](#) Department (MMDHD), there are some places in Michigan to be worried about a potential measles outbreak, but right now, Gratiot County is not one of them.

“Gratiot County has a waiver rate that is below the state average, and so that’s a good thing,” she said. “You tend to see pockets in the state where there will be higher waiver rates, and in Gratiot County we don’t really have those major concerns or pockets right now.”

The Michigan Department of Health and Human Services (MDHHS) compiles information about immunization waivers for schools with at least five kindergarten students enrolled. Eight schools in Gratiot County meet that criteria: Ashley Elementary School, Luce Road and St. Mary’s schools in Alma, Breckenridge Elementary School, Fulton’s Countryside Christian School and Fulton Elementary, South Elementary School in Ithaca, and Carrie Knause Early Childhood Learning Center in St. Louis.

In 2018, half of the schools had children with immunization waivers, all of them for “philosophical” reasons. Carrie Knause and South Elementary each had three students with exemptions, putting the schools at 94 percent and 97 percent vaccinated respectively. And Breckenridge and Luce Road schools both had two students with waivers, with those schools having 95 percent and 99 percent of their kindergarten students immunized respectively.

As for the other four schools, Fulton Elementary reported two kindergarten students with incomplete vaccination records while Ashley reported one. All kindergarteners at St. Mary’s and Countryside Christian were immunized.

With a handful of unvaccinated kindergarteners spread throughout the county, Morse said that it is unlikely that Gratiot County would experience a measles outbreak anytime soon. Countywide, less than 3.3 percent of kindergarten students have waivers, and in populations where 95 percent or more are immunized, “you’re virtually guaranteed to not have any outbreaks of measles,” she said.

That means that with over 95 percent of a population immunized, those who can’t be vaccinated — children who are too young, or those who have severe allergies, or an immunocompromised condition like cancer or a recent organ transplant — can be protected by herd immunity, Morse said.

And with a disease as contagious as measles, that herd immunity is not something to be taken for granted. The virus can live up to two hours on a surface or in the air, and the average measles patient will infect 10 to 12 others during the course of their illness, Morse said.

While Gratiot’s numbers aren’t a cause for concern, there are some areas in the Mid-Michigan district that officials are keeping an eye on. Marcus Cheatham, health officer of the MMDHD, said that of the three counties in the district — Gratiot, Clinton and Montcalm — Clinton county is the “problem child” when it comes to medically unnecessary vaccination waivers.

Clinton County’s overall kindergarten vaccination waiver rate falls between 4.4 and 5.6 percent, with some schools seeing 7 to even 19 or 20 percent of kindergarten students with immunization waivers. And while a handful of those waivers are for medical reasons, the vast majority are philosophically-based.

But with a disease so contagious and even deadly, why would parents take that risk?

Morse said that there are a number of reasons a parent might choose not to vaccinate, including false information linking the measles, mumps, and rubella (MMR) vaccine to autism as well as fears about preservatives and other ingredients. But ultimately, Morse said it all boils down to the fact that parents today haven't grown up seeing the effects of vaccine-preventable diseases, and simply aren't as worried about them as parents used to be.

"We don't fear these diseases like we used to, and people are more worried about potential risks from the vaccine than the diseases themselves anymore," Morse said.

Cheatham said that the battle against misinformation — and the way people share their opinions on immunization — is also a major contributor. He said that the vaccine debate is not so much a "health education issue" as it is a "crisis in communication" with respect to health.

"In our world of social media and internet outrage, I think the opposition to vaccination — and support for vaccination — is being driven by what's happening on social media, and it's pretty much impossible to cut through that," he said.

In an effort to convince more parents to immunize their children, the MDHHS established a regulation in 2014 that requires Michigan parents to attend vaccination education counseling if they seek a waiver for a non-medical reason. But Cheatham said that for the more tenacious members of the anti-immunization crowd, the educational session does little to convince them to vaccinate their children.

"Unfortunately, a lot of the anti-vaccine folks don't appreciate the fact that they can sign that waiver, and they resent even having to come to the health department, so even allowing them the ability to sign the waiver doesn't calm any of them down," he said.

There are a number of resources available from both governmental and independent organizations with reliable information about the benefits of vaccination. Morse said the CDC is good source of information from the government, while reliable nongovernmental resources include I Vaccinate at ivaccinate.org, the Immunization Action Coalition at immunize.org, and the Children's Hospital of Pennsylvania at chop.edu.

Remediation Update Provided for Velsicol Chemical Superfund Site

 Posted on Wednesday, November 6th, 2019 and is filed under [News](#). You can follow any responses to this entry through the [RSS 2.0](#) feed. You can skip to the end and leave a response. Pinging is currently not allowed.

Velsicol Plant Site – In-place Thermal Treatment

The heating for the first phase of Area 2 has begun and will be gradually ramped up over the next several months to attain target underground treatment temperature of 100 degrees Celsius (212 degrees Fahrenheit). A total of 323 holes were drilled for the heaters, extraction wells, temperature probes, and pressure probes. Drilling continues for phase 2 of Area 2 and 448 holes will need to be drilled for the equipment and wells. Drilling for phase 2 is planned for completion late this fall. The expected completion of in-place thermal treatment for Area 2 is fall 2021.

Velsicol Plant Site – Design Investigations

EPA has developed a plan to investigate portions of the slurry wall to determine its effectiveness. Drilling to support the investigation was completed over the past month. This work will also provide additional information on the design of the water treatment plant and provide additional groundwater sampling and elevation data.

Pine River Downstream Study

EPA and its contractor, Jacobs, are finishing the ecological study for the downstream area. Upon completion of the study, Jacobs will complete a report on cleanup options for the upstream section of the Pine River below the St. Louis dam, known as “Operable Unit 3” or OU3. The cleanup options will focus on removal of contamination from the most heavily impacted floodplains.

In addition, EPA and Jacobs continue monitoring the field pilot study using an activated carbon technology for potential application in the section of the Pine River that is farther downstream and appears less affected by contamination (OU4). The results of the field pilot study will be incorporated into a second feasibility study for OU4. There is compelling evidence that carbon is effective at binding to contaminants like DDT reducing its ability to harm the environment. Alma College will perform supporting work using Solid Phase Micro-Extraction (SPME), which is a specialized test to assess how animals in the ecosystem absorb chemicals like DDT. That absorption process is known as “bioavailability.”

This testing will help scientists understand how much the carbon reduces bioavailability of contaminants to animals. In August, the activated carbon was placed in the pilot areas and testing is anticipated to go through spring 2020.

Velsicol Burn Pit

EPA completed the final design for the hook-up of nine homes to St. Louis municipal drinking water and the site preparation for in-place thermal treatment. This will include removal of the remnant burn debris material. It is currently unknown if funding will be provided in 2020 for the site preparation or residential drinking connection. The in-place thermal treatment cannot begin until fall of 2021 at the earliest since only one thermal treatment project can operate at a time.

Community Involvement

EPA will be hosting two site tours of the plant site and the in-place thermal treatment system. Public is welcome and encouraged to sign up for either Thursday, Nov. 7, or Tuesday, Nov. 19, both from 3 – 5 p.m. Space is limited, so please contact Diane Russell to reserve your spot. Provide your name, phone number and/or email address via email to russell.diane@epa.gov or by phone at 989-395-3493.

Webpage: Area 2 in-place thermal treatment monitoring data is now available. You can find the information through the Velsicol Chemical main webpage, www.epa.gov/superfund/velsicol-chemical-michigan and click Cleanup Activities and look for Sampling and Monitoring.

Daily News

Saturday, November 9, 2019

Health Department honorees



The Mid-Michigan District Health Department presented numerous awards at its annual district-wide meeting Nov. 1. From left, Gayle Hood (10 years), Becky Stoddard (15 years), Lonnie Smith (20 years), Bryan Fowler (20 years), Dawn Wadle (25 years) and Holly Stevens (30 years) were all honored for their years of service. — Submitted photo



From left, Courtney Beagle, Jamie Shepler, Dena Kent, Jeannette Sternhagen, Nicole Montgomery, Michelle Hardman and Shelley Treynor were all honored for five years of service each. — Submitted photo



Norm Keon, an epidemiologist, was honored for his 50 years of service in public health. — Submitted photo



From left, Michelle Hardman (Community Health & Education Division), Rex Hoyt (Administrative Services Division), Kyle Zuiderveen (Environmental Health Division) and Liz Braddock (Health Officers' Award) were honored for their outstanding work performance. — Submitted photo

Chairmen Come Away From Septic Conference Better Informed, But With Little Answers



Posted on Wednesday, November 13th, 2019 and is filed under [News](#). You can follow any responses to this entry through the [RSS 2.0](#) feed. You can skip to the end and leave a response. Pinging is currently not allowed.

By Rosemary Horvath
Herald Staff Writer

The threat of failing septic systems seeping into Michigan waterways won't have a solution any time soon.

Participants from across the state at an all-day conference last week dissected options, including Gratiot County Board of Commissioners chairman George Bailey, who left the Traverse City venue with the same thoughts he had when he arrived.

"The conference was an affirmation that there is not a single method that will be truly acceptable to all," said Bailey, who also chairs the MidMichigan District [Health](#) Department, which services the counties of Gratiot, Clinton, and Montcalm.

Bailey was a panelist for an afternoon session entitled "The Public Options."

The Traverse City Record-Eagle reported one suggestion was to have a statewide minimum standard onto which local regulators can build upon, because a statewide uniform code would not fit all situations. Others supported giving local communities sole responsibility.

A state code allowing more alternative treatment systems also was favored. But if this were to happen, the state would need to hire more properly trained sanitarians, especially if state regulations required inspections as often as three to five years.

Bailey heard the same obstacles he heard locally last year when the MMDHD attempted to strength its own environmental health regulations. The goal was to address repairs to defective sewage systems and promote regular inspections and maintenance.

But a public backlash torpedoed any changes at that time.

A Mid-Michigan Water Quality Management Committee in 2014 worked with Public Sector Consultants to study the situation in the three counties, where it was discovered 43,000 septic systems existed and some 11,000 were considered as failing.

For Love Of Water, or FLOW, one of the organizations hosting the septic conference, estimates the state has 130,000 failing systems that release 5.2 billion gallons of sewage annually into the state's waters.

Also at the Traverse City conference was Bob Lombard of Riverdale and Anne Hall, near Riverdale.

Lombard said the trip was worthwhile for he gained information, but he "left without (hearing) a clear movement forward."

Lombard chairs a Riverdale committee actively pursuing alternatives to a community sewage treatment system the Michigan Department of Environment, Great Lakes and Energy is strongly pushing for that Seville Township settlement.

Riverdale residents on their own have worked to eliminate the systems discovered running raw sewage into drains and into waterways. Some have installed new systems while a handful of others have "pump and haul" contracts.

Lombard was impressed with Bay County's GPS tracking system used to pinpoint onsite systems.

The county has partnered with the city of Bay City on a single source, countywide GIS web viewer system.

Amalgam LLC of Mt. Pleasant worked with the county health department to map and enter information such as tank size, drain field type, installation date, and soil borings.

The Riverdale committee members have been collecting similar information submitted to the health department. Hall said she gained good and new information on the topic of sewer systems and problems throughout the state. Recognizing dumping into waterways had been common and acceptable practices at one time, she said correcting the effects will be challenging and costly, particularly for rural areas like Riverdale.

"Lots of people in rural Michigan areas don't have a lot of extra money to do what they need to have done," Hall reflected, adding "It's very sad about the cost of treatment systems," because it's obvious the cost of sanitary sewer systems are paid with tax dollars.

A Nov. 5 election proposal caught Hall's attention while up north.

Leelanau Township voters were asked to establish a metropolitan sewer district that would spread the township's \$1.3 million sewer debt across all property owners for eight years, rather than just sewer users.

"It was strongly defeated," Hall reported.

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Bridge



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Michigan Environment Watch

Michigan's PFAS cleanup costs are mounting. Taxpayers may get stuck with the tab.



Terry and Tom Hula exit a shed that contains a 1,500-gallon water tank on their property in Belmont near Grand Rapids. Their well water was contaminated with PFAS from a tannery operation by the shoemaker Wolverine World Wide. (Bridge photo by Steve Jessmore)

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Bridge Magazine interviewed nearly 50 residents, activists, scientists and lawmakers and reviewed hundreds of pages of documents on both the PBB crisis of 1973 and the ongoing PFAS chemical threat. Reporters Riley Beggin and Jim Malewitz also crisscrossed the state, speaking to residents in St. Louis still recovering from the PBB crisis and those in Belmont, Parchment, Oscoda, Grand Rapids and other communities affected by the emerging PFAS threat. In addition, the reporters collaborated with Michigan Radio for a special audio report about the crisis. Bridge's full report is:

- [Poisoned Michigan: How weak laws and ignored history enabled PFAS crisis](#)
- [Letter suggests Bill Schuette shrugged off request to sue 3M over PFAS](#)
- [In a Michigan town with a toxic legacy, residents fought for decades to heal](#)
- [Michigan found PFAS in Oscoda in 2010. There's still no plan to clean it up.](#)
- [Graphic photos vivid reminders of horror of Michigan PBB chemical crisis](#)

BELMONT – Terry Hula loves Christmas. So much so, she and her husband, Tom, bought a home 28 years ago that was surrounded by a Christmas tree farm.

Every summer, she celebrates Christmas in July, a gathering of her two daughters and grandchildren to watch Christmas movies, make Christmas cookies, exchange presents and play Christmas-themed games.

They were celebrating again in 2017 when state officials knocked on the door.

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PFAS.



Bridge Magazine

Michigan's PFAS cleanup tab is spiraling. Taxpayers may get stuck with the tab.

4:30

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The visit ended their dreams of selling their home for a profit and retiring. Now, Tom, 65, is still working and they're stuck with a home they can't sell. Those costs – along with those incurred by hundreds of other families in [PFAS-laden communities](#) – are just one piece of what's likely to be a wildly expensive contamination crisis.

Near Belmont in west Michigan, experts say the total cost of handling the crisis will be tens of millions of dollars, if not hundreds of millions. The Michigan state government has already spent \$69 million on PFAS efforts across the state in 2018 and 2019 alone.

Wolverine World Wide, the company whose shoe manufacturing operations were the source of the pollution, is now the target of more than 400 lawsuits from families, nearby townships and the state hoping to recoup some of the costs.

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residents statewide with the flame retardant PBB.

Decades later, the cleanup in St. Louis is ongoing. Officials estimate it will cost around \$500 million when remediation is finished and another \$5 million annually forever to maintain. The majority of the costs have been paid by state and federal taxpayers; Velsicol, whose parent company went bankrupt in 2000, paid about 10 percent, according to research from Alma College professor emeritus Ed Lorenz.



An inspector for the Michigan Department of Environmental Quality scrutinizes a barrel believed to contain PFAS chemicals at a northern Kent County site used by Wolverine World Wide. (Courtesy photo)

Communities contaminated with PFAS could suffer a similar fate without uncompromising legislation from the state, said [Judith Enck](#), a former regional administrator for the Environmental Protection Administration under President Barack Obama. She and others say lawmakers must also rethink how industrial chemicals are regulated.

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On that day in 2017, as holiday cheer beat back the sweltering summer weather outside, the Hulas found themselves at the epicenter of Michigan's most widespread chemical contamination crisis in decades.

The Christmas tree farm that had so charmed the Hulas had stood over the former disposal site on House Street, where Wolverine World Wide dumped old leather hides from a nearby tannery.

Those hides had been treated with a chemical containing PFAS compounds to make them water-resistant. The compounds have been used since the 1950s to make non-stick cookware, stain-proof carpets and fabrics, makeup and firefighting foam.

PFAS, short for per- and polyfluoroalkyl substances, are still being studied, but they are [linked to a host of health problems](#). They may affect childhood development, impair fertility, increase cholesterol levels, hamper immune systems and increase the risk of cancer. The Hulas wonder if the health problems they and their daughters have faced in recent years are a result of the contamination. They wouldn't elaborate on the nature of the health problems.

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Raising children in Belmont was idyllic, said Tom Hula, shown with his wife, Terry. "You just had a good feeling. That's gone," he said. (Bridge photo by Steve Jessmore)

"It was Norman Rockwell," Tom Hula said of their years spent on the property raising their children. "You just had a good feeling. That's gone."

The Hulas' beige tri-level house sits on nearly 7 acres. Their property has apple trees, rolling hills and a swimming lake that's a short walk through the backyard. Tom Hula said selling their home was supposed to be their ticket to retirement.

Now, they get the water from a 1,500-gallon tank installed by Wolverine after their well failed in 2018, and Tom is working 12-hour days as a truck driver.

"In the case of the Hulas, I think the value loss was almost 100 percent," said Aaron Phelps, an attorney who is representing the Hulas and more than 400 other families in individual lawsuits against Wolverine. "Nobody's going to go buy a house that requires water getting trucked in twice a week."

Home values of his other clients declined 20 to 100 percent, Phelps said.

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hundreds of suits could cost Wolverine millions of dollars. His cases are separate from [three other class-action lawsuits](#) against Wolverine and 3M, which manufactured the PFAS used in Wolverine's factories. The cases were recently consolidated.

And Wolverine, the state of Michigan and local governments have also spent millions of dollars combined on the House Street disposal site, largely on tests of drinking water wells. The separate water filtration systems Wolverine installed in most affected houses cost about \$2.5 million before maintenance costs, state records show.

That doesn't include the ongoing maintenance of the Hulas' well, which the couple has heard costs the company about \$900 per week.

"It's just a very tough way to live," Tom said.

When the Hulas' water tank was installed, there were indications a municipal water system would be extended to their area quickly — that's one of the main issues the state and nearby Plainfield and Algoma townships are fighting for in their suits against the shoe company.

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Tom Hula inspects his supply of fresh water on his property in Belmont. The truck driver had hoped to sell his home and retire until groundwater contamination plunged his home's value. "Nobody's going to go buy a house that requires water getting trucked in twice a week," said Aaron Phelps, an attorney who represents the Hulas and more than 400 other families in lawsuits over the contamination. (Bridge photo by Steve Jessmore)

Wolverine has blamed 3M, which it claims should share the burden of remediation costs because it manufactured the PFAS used in Wolverine's factories. The company alleges 3M knew its products had PFAS in them but didn't warn their customers, and [there are internal 3M documents that support the claim](#). The company has said it won't pay for the municipal water system without 3M, a move that caused negotiations between Wolverine and the townships to [break down in December 2018](#).

When negotiations stalled, it became clear to the Hulas there wouldn't be a quick fix.

Terry retired before PFAS were discovered in their drinking water. Now, she rations water so they can make it to the next fill-up. She spends so much time trudging to and from the wooden structure shielding the barrel from harsh winter weather she's considering calling it her "she shed."



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Michigan Attorney General Dana Nessel declined to comment and Wolverine did not respond to multiple requests for interviews for this story. A spokeswoman for Nessel said she isn't ready to speak on the lawsuits until she's been briefed with "a very deep dive" on the issue, but provided a legal brief showing the state's argument that the whole house filters have "not abated the imminent and substantial endangerment posed by" PFAS.

Wolverine said those filters [achieve the same goal a municipal water system would](#), so they shouldn't have to pay for the utility extension.

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but have said they don't have the money to continue without Wolverine's help.

If Wolverine doesn't agree to pay for the municipal water system, Van Essen estimated the long-term costs of providing clean drinking water to the affected area will climb closer to \$700 million.

"Reserving the kind of money that you know will conservatively cover all those costs, I think it is as much as 10 times more expensive compared to municipal water," Van Essen said.

The huge number incorporates long-term costs: The filtration and monitoring could be ongoing forever because PFAS don't naturally break down. But the estimate doesn't include costs of getting PFAS out of drinking water, which can tally millions of dollars, according to state documents obtained by Bridge.

Statewide, these costs are likely to be astronomical: In Oscoda, which also is contending with PFAS, the state estimated in 2018 that source control and remediation would total about \$195 million.

Warning signs from St. Louis

For the 7,000-some residents of St. Louis, Michigan, a small town in the middle of the state, the legal battles ahead for PFAS victims are all too familiar. Fixing a chemical contamination crisis there from decades ago has already cost \$180 million and will likely cost nearly three times as much when it's complete.

In the 1970s, a St. Louis-based plant owned by Velsicol Chemical produced the fire retardant polybrominated biphenyl (PBB). One day, workers mixed up bags of PBB with bags of cattle feed, shipping the chemical out to farms around the state. An estimated 9 million Michiganders ingested the chemical through dairy or meat. As recently as 2004, [60 percent of Michigan residents](#) tested above average for PBB blood levels.

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St. Louis, a small town in the middle of Michigan's Lower Peninsula, is still suffering from a 1973 chemical mishap and decades of pollution from a bankrupt chemical company. Fully remediating the land, one of the costliest Superfund sites in the country, will cost about \$500 million and another \$5 million annually to maintain. (Bridge photo by Dale Young)

Velsicol also disposed of PBB and industrial waste in the area for years. Other chemicals, including the possible carcinogen DDT, have been found highly concentrated in local soil as recently as 2013 after residents said they'd been noticing birds dropping dead after eating contaminated worms.

PBB can cause a [variety of health problems](#), including higher risks of certain kinds of cancer and higher rates of miscarriage. Researchers at Emory University have found those symptoms may be able to be passed down from generation to generation, impacting many more people than those initially exposed.

More than 40 years after the contamination was first discovered, St. Louis is still being cleaned up and its residents are still dealing with the fallout.

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federal taxpayers.

When the remediation is completed, Alcamo said it will cost about \$500 million. And in around seven years, maintenance and operation of the site will be shifted to the state, which will cost approximately \$5 million a year indefinitely.

Velsicol — the company responsible for St. Louis' plight — will have paid about \$50 million to clean up the pollution it caused, said Ed Lorenz, a professor emeritus of history and political science at Alma College who has studied the PBB crisis in St. Louis for decades.

Velsicol succeeded “in avoiding the worst liability that they could have been held accountable for,” Lorenz told Bridge. The company reached a \$38.5 million settlement with the state in 1982, in which it agreed to bury and contain its contaminants in exchange for the state dropping the suit.

“The state gave them a complete pass on the future if they pay the tiniest fine,” Lorenz said. “The state basically gave up its possibility of recovering something for a pittance.”



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The assumption seemed to be that the crisis was over. A few years later, Velsicol was bought by Fruit of the Loom, which went bankrupt and shed its liability for the St. Louis site before being acquired again in 2002.

But the pollution containment didn't work. Decades later and millions of tax dollars spent, remediation is still ongoing, and there's no company left to pay for it.

The state's failure to secure funding for the St. Louis cleanup in the 1980s should be a lesson to state regulators now, Lorenz said: Get every dime you can.

"I would be very cautious about assuming — until you're sure — that you're getting enough assets out of them," Lorenz said of negotiations with Wolverine and possibly 3M. "If the taxpayers don't want to pay for the cleanup, they've got to really be careful about being low-balled by the lawyers for the other side. The cost of these types of cleanups can be massive."

What can be done

The fate of St. Louis is possible for communities like Belmont if no municipal water system is built, said Van Essen, the lawyer for the townships. Taxpayers could be victim to Wolverine's success or failure: Both bankruptcy or being sold to a company headquartered outside of the United States could dissolve it of its potential liability to west Michigan, Van Essen said.

"No one ever thought GM would go bankrupt, and yet it did," he said.

Enck, a former regional administrator for EPA and a fellow at Bennington College in Vermont, said the state and federal government have the legal resources to get what's necessary to fund cleanups if they're strategic.

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Former EPA administrator Judith Enck said the state and federal governments need to dramatically reform laws regulating chemical companies. She said Michigan needs to aggressively pursue litigation in PFAS contamination cases to ensure taxpayers don't get stuck with the bill. (Courtesy photo)

Enck said "it would be grossly irresponsible," however, for the state to leave PFAS in the ground even if locals already have an alternative clean drinking water supply.

"You do not want to write off groundwater resources," Enck said. "And that's what you would be doing if you didn't require the polluters to find the source of the contamination and treat it. That has to happen here."

The state won't say how much it is seeking from Wolverine, and Wolverine has said the [mediation with the state is confidential](#).

[James Bilborrow](#), an environmental lawyer at Weitz & Luxenberg in New York, said one of the reasons for that is "it's not just Wolverine who probably should pay."

Efforts to sue 3M haven't come to fruition. Former Gov. Rick Snyder told former Attorney General Bill Schuette to sue 3M over PFAS contamination in July 2018. Schuette [never filed the suit](#). Nor has Schuette's successor, Dana Nessel.

It can be a challenge to get states to negotiate for enough money because of the fear that they'll run a local jobs-creator out of business, Bilborrow said.

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No quick fixes

Terry Hula said she doesn't hold any resentment toward Wolverine. In fact, the couple bought two pair of shoes each from the company after learning about the contamination because they don't want it to go out of business.

But she's getting worn down.

"I take long drives to go get a cup of coffee, just sit in a parking lot somewhere for hours just to not be here for a while," she said.

This summer, Terry decided to skip Christmas in July for the first time in more than 20 years. Last summer, it seemed as if a resolution between the state and Wolverine was on the horizon. Now, it's clear no quick changes are coming.

"This year, my heart just wasn't in it. Maybe next year."

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Graphic photos vivid reminders of horror of Michigan PBB chemical crisis

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This slideshow shows how a 1973 mixup at a chemical company in St. Louis sparked an agricultural and health disaster statewide that still affects residents. Warning: Some photos may be upsetting.



Poisoned Michigan: How weak laws and ignored history enabled PFAS crisis

November 18, 2019 | [Riley Beggin](#), [Jim Malewitz](#)

Michigan lawmakers said 'never again' after an agricultural mishap sparked one of the worst poisonings in history in 1973. But serious reform never came and some mistakes of that crisis are being repeated with the PFAS threat befouling state waterways.





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Poisoned Michigan: How weak laws and ignored history enabled PFAS crisis



Residents of St. Louis, Michigan, have spent nearly 50 years imploring state and federal regulators to clean up the remnants of a contaminated chemical factory that was the site of Michigan's largest mass poisoning in 1973. Even after spending millions in taxpayer money, the work isn't done. (Bridge photo by Dale Young)

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Bridge Magazine interviewed nearly 50 residents, activists, scientists and lawmakers and reviewed hundreds of pages of documents on both the PBB crisis of 1973 and the ongoing PFAS chemical threat. Reporters Riley Beggin and Jim Malewitz also crisscrossed the state, speaking to residents in St. Louis still recovering from the PBB crisis and those in Belmont, Parchment, Oscoda, Grand Rapids and other communities affected by the emerging PFAS threat. In addition, the reporters collaborated with Michigan Radio for a special audio report about the crisis. Bridge's full report is:

- [Michigan found PFAS in Oscoda in 2010. There's still no plan to clean it up.](#)
- [Letter suggests Bill Schuette shrugged off request to sue 3M over PFAS](#)
- [In a Michigan town with a toxic legacy, residents fought for decades to heal](#)
- [Michigan's PFAS cleanup costs are mounting. Taxpayers may get stuck with the tab.](#)
- [Graphic photos vivid reminders of horror of Michigan PBB chemical crisis](#)

In 1973, an accident at a chemical plant in the small town of St. Louis in the middle of Michigan's mitten triggered one of the largest mass poisonings in American history.

Before the crisis was over, nearly the entire state population – about 9 million residents – ate food contaminated with a toxic fire retardant called PBB that workers erroneously mixed into cattle feed.

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His companion through the chaos: his 18-year-old son, Tony, who shadowed him in 1977 as state lawmakers investigated the catastrophe.

Neither Spaniola thought they'd see anything like it again. Too many lives turned upside down. Too much public outrage. Too much money spent cleaning up the mess.

But more than 40 years later, both hear echoes of that dark history. The rumblings started in 2016 when residents were alerted to drinking water contamination in Oscoda, where Tony owns a summer home in the Lake Huron beach town near the closed Wurtsmith Air Force base.

Michigan regulators told Tony Spaniola, now an attorney, his home was in the “zone of concern” for persistent chemicals called PFAS that have upended life in Oscoda – infiltrating drinking water wells and prompting warnings not to eat certain fish and deer.



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Experts have linked the chemicals — used in everything from clothes to cookware — to a litany of ailments including cancers. State regulators have since detected high levels of PFAS, short for per- and polyfluoroalkyl substances, in at least 74 groundwater sites statewide. They're so ubiquitous surveys suggest that trace amounts of PFAS flow in the blood of nearly every American.

"It's almost spooky. I remember ... sitting in the front row at a meeting in Oscoda thinking, 'I've seen this film before,'" Tony Spaniola told Bridge Magazine.

"I was a spectator before, and now I'm in it. I'm impacted."

To be sure, Michigan's PFAS crisis doesn't precisely mirror the PBB catastrophe of the 1970s. The PBB crisis spiraled from one source of contamination, while many are to blame for PFAS pollution. The PBB crisis was largely contained to Michigan and resulted in immediate illnesses to cattle, while PFAS are emerging as a national problem and their long-term effects aren't yet known.

Bridge Magazine spoke to nearly four dozen impacted residents, activists, scientists, public officials and others and reviewed hundreds of pages of documents on both crises. Their stories show that many lessons from the PBB crisis have gone unheeded, as state and federal regulators remain ill-equipped to respond to large-scale chemical poisonings, much less prevent one.

Bridge has found:

- Neither the federal nor state governments have robust systems to prevent contamination, allowing manufacturers to make and distribute chemicals until they are proven harmful, rather than assuring safety beforehand. That [increases the risk of exposure to dangerous chemicals](#) for decades before detection.
- Government bureaucracy remains [painfully slow to launch investigations](#). Michigan regulators took years to search for contamination in both the PBB and PFAS crises, despite ample warnings from citizens and government officials.
- Taxpayers often [suffer the costs of cleanup](#) due to bureaucratic delays and litigation that can

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century after the PBB crisis began, [St. Louis residents are still watchdogging](#) the cleanup around the shuttered chemical plant that triggered the PBB crisis. Government action has often come because residents made discoveries or went to court themselves. St. Louis residents say today's PFAS victims must prepare for years of activism if they hope to see their communities fully cleaned up.

Michigan is now trying to play catchup. Since late 2017, the state has earned kudos from environmental groups and health experts as one of the most aggressive in the nation at detecting and researching PFAS sites. State leaders have called on Washington, D.C., to regulate PFAS nationwide (thus far to no avail), and Gov. Gretchen Whitmer in October proposed regulations to limit PFAS in drinking water, something only four other states have enacted. The state Department of Environment, Great Lakes and Energy (EGLE) has set up a unit to expedite response times to the next contaminant to surface in Michigan's waters, and it's fielding calls from other states hoping to learn from the agency's efforts, a spokesman told Bridge.

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A civil trial in which the state is attempting to get shoe manufacturer Wolverine World Wide to pay for the costs of its contamination in west Michigan is set for Jan. 8.

Many who spoke to Bridge are grateful for the state's newfound attention to the crisis. But they also noted that even regulators' best efforts are still reactionary. Nearly every person affected by PFAS or PBB who spoke with Bridge questioned why the government allows companies to use chemicals that haven't been proven safe, and they called for fundamental changes to industrial chemical regulations to prevent similar episodes. That's a lesson the state and federal government should have learned decades ago, experts said.

"Here we are again: the same thing," said Robert Delaney, a geologist who discovered widespread PFAS in 2010 while working for the since-renamed Michigan Department of Environmental Quality in Oscoda.

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to the U.S. Environmental Protection Agency to do much of that work.



Robert Delaney, a state geologist who discovered widespread PFAS in 2010 in Oscoda, said the current chemical crisis is reminiscent of the state's troubles with PBB in the 1970s. "Here we are again: the same thing," he said. (Bridge photo by Dale Young)

For most of the country's history, the federal government did not require chemical companies to prove their products safe before selling them. A landmark 2016 law changed that practice in theory, but the EPA's implementation of the overhaul has proved contentious under President Donald Trump, who has appointed chemical industry insiders to oversee the program.

The EPA regulates chemicals under the 1976 Toxic Substances Control Act (TSCA), which then-President Gerald Ford signed as Michigan was dealing with the fallout from the PBB disaster. Around that time, experts were examining the health of farmers exposed to the fire retardant.

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harmful chemicals from entering the market. The law essentially grandfathered in 62,000 chemicals already in use, assuming them safe unless the EPA could prove they posed an “unreasonable risk” and that the benefits of regulation were greater than the costs to industry and the economy.

In 2013, the Government Accountability Office reported that the EPA had banned only five substances under the law, lacking the resources and information to declare tens of thousands of others unsafe.

For most of its history, the 1976 law required manufacturers to notify the EPA of new chemicals, and the agency had 90 days to determine whether they were unsafe. But the law didn't require companies to submit certain health or safety data, meaning the EPA rarely took action on new chemicals.

Congress reformed the law in 2016, requiring the EPA to review risks of new chemicals and expanded its power to restrict chemicals, even if companies provided too little information. Under the Trump administration, though, the EPA has narrowed the scope of its safety evaluations by considering only risks of direct contact to chemicals. That excluded risks associated with the chemical's presence in the air, ground or drinking water, for example.

Jon Corley, spokesman for the American Chemistry Council, the leading national industry organization for chemical companies, said the 2016 reform was “essential to ensuring protections for human health and the environment, while enabling our industry to continue to innovate, create jobs, and grow the economy.”

“EPA continues to consistently meet key TSCA deadlines and requirements. Meeting those statutory deadlines demonstrates EPA's commitment to effective implementation of the law,” Corley told Bridge via email.

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Michigan's toxic history

The PBB crisis started quietly.

The 54-acre campus of Michigan Chemical Corp. manufactured a variety of products along the Pine River in St. Louis. Among them: the fire retardant polybrominated biphenyl (PBB). In May 1973, the company ran out of pre-printed bags for its products. That led workers to package PBB and a cattle feed supplement in nearly identical bags, distinguished only by the products' handwritten trade names: FireMaster and NutriMaster.



Cows were slaughtered by the thousands in Michigan in the 1970s after lawmakers concluded they were infected with the toxic PBB chemical. Against the objections of civic leaders, animal carcasses were buried in mass graves. (Photo courtesy of the Michigan Archives, General Photograph Collection)

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offspring, a federal scientist didn't identify PBB as the culprit until April 1974, nearly a year after the mixup.

By then, nearly every Michigander had consumed PBB through meat and milk. Researchers have since linked high levels of exposure to breast and liver cancer, kidney and thyroid problems.

State and federal regulators spent years more downplaying the problem. Researchers have found some PBB symptoms may be passed down from generation to generation, affecting the urinary and reproductive systems of children and grandchildren of those originally exposed.

But that wasn't the only chapter in Michigan Chemical's toxic legacy: The company, owned for many years by Velsicol, had dumped industrial waste including now-banned DDT insecticide into the Pine River that flowed through town since the 1930s.

Contamination from that plant has plagued St. Louis and its Pine River for decades.

While the plant still operated in the 1960s, the Pine River was barren of fish, stinking of chlorine from dumping at the plant. Anxious parents herded children away from a football field, flooded in 1986, with tainted water. Just a few years ago, birds dropped dead after eating DDT-contaminated worms. Through it all, residents were diagnosed with cancers and other ailments they suspect was caused by the pollution. The EPA is still cleaning up the contamination under its Superfund program in a project expected to stretch another decade.

After the PBB crisis abated, Michigan lawmakers took some steps to ensure an identical situation wouldn't recur. Four years after the mixup, Bus Spaniola shepherded into law a bill to lower the limit of PBB in dairy cattle, which the agriculture industry opposed.

The state also formed a Toxic Substances Control Commission to investigate new and emerging chemical contaminants, but it was dissolved in the late 1980s.

The emerging threat

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publicly aired his concerns in 2017, just a month before Gov. Rick Snyder launched a statewide, multi-agency response to PFAS.



That led to criticisms that Michigan should have acted sooner – a critique appreciated by Heidi Grether, DEQ director from 2016 to 2018.

But scientists knew less about the chemicals' dangers years ago, and the Legislature had granted her agency only so many resources, she said. "If you do [focus on PFAS], what are you not going to do?"

And over the last two years, PFAS has proven to be Michigan's most widespread chemical contamination crisis since the PBB disaster.

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Each of the states that have finalized their own drinking water standards have chosen lower thresholds, and Whitmer's proposal is similar to those. For two of the most studied types of PFAS, the CDC has found minimal risk level to be 7 parts per trillion for a chemical known as PFOS and 11 parts per trillion for another called PFOA.

Research is still evolving, but experts have linked the chemicals to cancer, liver and thyroid problems and hormone and immune system deficiency.

The term "PFAS" encompasses some 5,000 non-stick, waterproof and stain-resistant compounds that can also serve as fire retardants. The chemicals have been used in packaging and all sorts of everyday products. They may have been used or discarded at as many as 11,300 Michigan fire stations, landfills, industrial sites, military bases, airports and other locations, according to state estimates.

Unlike some other chemicals, PFAS don't break down in the soil or water, meaning the contamination will linger for decades – hence their nickname: "forever chemicals."



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PFAS are still being studied, but their effects are already felt statewide. In Oscoda, resident Greg Cole said he was forced to get drinking water from the spigot behind the township hall for months after his well was found to be contaminated and before health officials provided a water cooler.

Across the state in Belmont near Grand Rapids, Jennifer Carney spent years plagued with headaches, dizziness and trouble walking, only to have it clear up after she stopped drinking contaminated water. Her neighbor Sandy Wynn-Stelt's husband died of liver cancer just a year before officials found PFAS levels 750 times the national average in her blood.

Companies in the United States have phased out some types PFAS thought to be most hazardous. But the chemicals are not banned, and companies continue to manufacture other types of PFAS whose health risks aren't known. The EPA has set advisory levels, which are unenforceable, for only two of the thousands of PFAS compounds.

Whitmer's proposed contamination limits for public drinking water systems would help protect communities against seven compounds. While generally applauded by environmentalists, some have raised concern that her proposals would only address a handful of the PFAS.

Michigan's science advisory workgroup acknowledged other PFAS compounds are likely to have similar effects as the ones Whitmer proposes to regulate. But the workgroup said it lacked enough information to recommend health-based limits.

For other unregulated PFAS compounds, "additional monitoring, research for potential sources, notification of the public, and efforts to reduce exposure are warranted," the work group wrote in a June report developed for the PFAS Action Response Team.

Michigan's response, however belated, is being closely watched nationally because many experts believe PFAS contamination could soon become a national crisis. The nonprofit Environmental Working Group has tallied around 610 locations in 43 states where PFAS have been found. The group wrote when announcing their findings: "The known extent of (PFAS) contamination ... continues to grow at an alarming rate, with no end in sight."

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“We shouldn’t be developing chemicals that we don’t know what they’re going to do. Don’t develop this ... with the idea, ‘Oh we’ll find out if it’s poisonous later, after it poisons you,’” said Wynn-Stelt, one of the affected residents in Belmont and a leader of a new community group providing the EPA input on remediation efforts.

“We don’t do that with medication, we don’t do that with cars. So I don’t know why would we do that with chemicals that we put in the world. Those need to be scrutinized just like it was a pill your kid was going to take.”

Wynn-Stelt is suggesting what environmental scholars call “the precautionary principle.”

Advocates of the precautionary principle argue that regulators should shift the burden of proof: Chemicals should be proven safe before use, rather than proven dangerous afterward. Scientists who support this practice compare it with the doctor’s oath — first, do no harm.

We shouldn’t be developing chemicals that we don’t know what they’re going to do. Don’t develop this ... with the idea, ‘Oh we’ll find out if it’s poisonous later, after it poisons you.’ ”

– Sandy Wynn-Stelt of Belmont, leader of a community group that formed in response to PFAS contamination

Ed Lorenz, a professor emeritus of history and political science at Alma College who has studied the PBB crisis in St. Louis for decades, and other proponents of the precautionary principle argue that a thriving economy doesn’t necessarily have to be predicated on risks to human health.

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The European Union incorporates the precautionary principle in its chemical regulations. In 2007, it adopted a policy known as REACH that puts the burden on chemical manufacturers to prove their products are safe.

A 2016 European Commission report concluded that REACH has a “minor negative impact on the competitiveness of the EU industry” compared to outside countries, though some regulated companies interviewed for the study identified benefits of the policy – including more transparency within the industry and across supply chains.

“At least one case company considers that complying with REACH can be used to brand its products as environment-friendly in other markets,” the report said. A 2005 European Commission study estimated that REACH would yield up to €50 billion (about \$55 billion in the United States) in environmental and health benefits over the next 25 years. The commission hasn't yet analyzed the policy's benefits in practice.



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JUDITH ENCK, a former regional administrator for the EPA and a fellow at Bennington College in Vermont who also indicated support for a more proactive approach to chemical regulation, said one of the challenges of the precautionary principle is that regulators often lack teeth.

“The environmental agencies just don't have the resources, they don't have the environmental cops on the beat, that the public thinks they have. And they don't have the resources to do extensive testing and monitoring,” Enck said.

Instead, she recommends that Michigan lawmakers require companies using more than a minimal amount of certain toxic chemicals to test the soil and water near their properties every year.

“This is a very pro-business initiative, because it would allow a kind of an early warning system rather than what we currently have, where contamination is released and not discovered, sometimes for decades,” Enck said.

Enck also proposed that companies would be required to post the results publicly so the community can keep tabs on what nearby businesses in their communities are releasing. She said that would protect human health and keep companies safe from legal liability later.

There are more than 86,000 chemicals used in business today. “Very few of them have been tested for health impacts,” Enck said.

That's why she also encouraged supporting “green chemistry” research — the production of environmentally-friendly alternatives to industrial chemicals — that could help ensure safer manufacturing in the future.

Critics of the precautionary principle argue that it's an oversimplified answer to complicated problems. They contend it may have unintended consequences, stifle innovation and halt advances that have helped society.

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number of chemicals that have been ‘banned,’” Dulmes said.

“In fact, we believe that continuing to develop new, safer chemistries is one of the most effective ways to benefit our world.”

The chemical industry has learned much more about PFAS chemicals, phased some out, and developed ways to minimize release of the chemicals from products that are still in use, Dulmes said.

“It is certainly understandable to want to look back in hindsight and come to easy conclusions or arguments, but in reality it’s often far more challenging to understand the finer scientific points or impacts in real time, especially as we can detect ever-lower levels of chemicals,” he said.



Taxpayers likely will spend more than \$500 million cleaning up contamination from the former Michigan Chemical plant in St. Louis. The bankruptcy of Fruit of the Loom, the parent company to the plant’s owner Velsicol, shielded it from long-term liability for the cleanup. (Bridge photo by Dale Young)

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Now 61, he's returned to advocacy, helping start a group pushing for PFAS cleanup and regularly speaking to groups pushing for clean drinking water across the state.

His time spent with his father forever shaped his notion of how to achieve political change.

"It was just an incredible thing to see," Spaniola said. "Power politics in action — or inaction, there was a lot of inaction for a long time."

He recalled one trip in 1977 when the pair, along with other Michigan lawmakers, drove to New York to visit the laboratory of Irving Selikoff. He was known for discovering the adverse health effects of asbestos and had examined more than 1,000 farmers who had been exposed to PBB.

Spaniola recalled Selikoff telling the assembled policymakers that his team had discovered PBB exposure was linked to T cell damage — important immune system cells that protect against cancer.

"The whole room just went silent," Spaniola said.

Selikoff's testimony helped pass limits to PBB levels in beef. But he told the New York Times that the failure to reform the chemical industry would only invite future crises.

Selikoff, who died in 1992, asked:

"Will we discover 40 years from now that we have another problem like [PBB] on our hands?"

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When a chemical disaster strikes – as it did in the tiny town of St. Louis – bills mount far faster than polluters' willingness to pay. It's a lesson survivors of the crisis fear will repeat with PFAS, which Michigan already has spent tens of millions to address.





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PFAS water contamination hits Grand Ledge military base. Here's what it means and why it matters.

[Craig Lyons](#), Lansing State Journal Published 10:00 p.m. ET Nov. 20, 2019 | Updated 8:05 a.m. ET Nov. 21, 2019

Lansing State Journal columnist Graham Couch and Freep beat writer Chris Solari break down the Spartans' collapse vs. Illinois
Graham Couch and Chris Solari

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GRAND LEDGE – Michigan environmental regulators know PFAS contamination exists at a Grand Ledge Michigan National Guard facility. Now, they want to know to what extent the contamination went beyond the site.

The Michigan Army National Guard has agreed to do more sampling of groundwater at its Grand Ledge facility to see if per- and polyfluoroalkyl substances, known as PFAS, contamination is a wider problem for the city of Grand Ledge and the rural communities nearby.

“It is unknown whether an unacceptable risk of PFOA or PFOS contamination exists in these residential water supplies, or if the water supplies are threatened by an as yet unidentified contamination,” the Michigan Department of Environment, Great Lakes, and Energy wrote in a July letter to the National Guard.

The Grand Ledge facility has a key red flag that’s generated PFAS concerns across Michigan and the country: Aqueous film-forming foam, which is commonly used for firefighter training.

Capt. Joe Legros, a spokesman for the Michigan Army National Guard, said the National Guard is working on further investigation and will figure out how big the problem is. He said the agency is working with the state and community to keep people informed.



Buy Photo

The Michigan National Guard's Grand Ledge Aviation Readiness Center pictured Wednesday, Nov. 13, 2019. (Photo: Matthew Dae Smith/Lansing State Journal)

“The Michigan Army National Guard is concerned about the PFAS issue,” Legros said.

Here’s what the state knows:

- The storage and past use of PFAS-containing foam is a sign of contamination.
- Two water samples were double the state's 70 parts per trillion limit for clean up.
- The risk the site poses to drinking water supplies has not been fully assessed.

Testing showed PFAS contamination at military facility in pond and well

The Grand Ledge facility housed a firefighting unit during the 1980s until it was disbanded in the 1990s. Records showed the aqueous film-forming foam was stored at the facility and possibly used for training.

Samples pulled from shallow groundwater and surface water were enough for EGLE to seek more investigation into PFAS contamination. If classes of PFAS exceed 70 parts per trillion, the state requires cleanup.

In May 2019, a contractor for the Michigan Department of Military and Veterans Affairs pulled 42 samples from groundwater, surface water and soil. Twelve of those were ground and surface water.

Two water samples had elevated PFAS levels, the testing found.

A July report to EGLE said a stormwater retention pond on the site had PFO concentration at 141 parts per trillion, more than twice the limit required for cleanup. Water from the pond goes into the Reed Drain, a large draining ditch that runs behind the National Guard facility.



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Farmland and the Reed Drain north of the Grand Ledge National Guard facility near M-100 and West Eaton Highway. (Photo: Matthew Dae Smith/Lansing State Journal)

The base is largely surrounded by commercial businesses and strips of rural homes.

One shallow groundwater well had a combined total of 113 parts per trillion of PFAS.

None of the samples or monitoring wells were sunk to enough depth to see if PFAS contamination is present deeper.

Michigan National Guard helping with clean up

In October, EGLE met with Michigan National Guard officials about the new sampling work. Fieldwork could start in late November or early December, said Scott Dean, an EGLE spokesman.

EGLE wants more samples from the soil around the Army Aviation support facility hangar, sediment in the northeast portion of the property, surface water around a retention basin and six monitoring wells for deep groundwater.

EGLE is still reviewing the National Guard's work plans.

A tenet of the National Guard is that when it encounters a situation, it will leave it in the best condition possible, Legros said.

"That holds true for PFAS," Legros said. "We'll do our part to help clean it up in any way we can."

Grande Ledge facility among Michigan's 13 PFAS sites with military ties

The Grand Ledge facility isn't the only military-tied facility that's under examination for PFAS contamination in Michigan.

Thirteen of the state's 73 identified PFAS sites are tied to military operations or facilities, EGLE said.

Nationally, the Environmental Working Group and Social Science Environmental Health Research Institute at Northeastern University had identified 1,361 PFAS sites in 49 states. The groups have identified 297 military installations with known PFAS contamination.



Robert A. Tasior stands next to water from the Van Etten Creek in Oscoda on Wednesday, March 13, 2019 near the dam that feeds to Van Etten Lake. (Photo: Ryan Garza, Detroit Free Press)

The state linked the use of firefighting foam that contained PFAS to contamination at other Michigan military sites.

[Contamination from the Wurtsmith Air Force Base in Oscoda](#) led to responses from state and federal officials to investigate and remediate PFAS. Since 2017, the high levels of contamination triggered health departments to give residents bottled water or filtration systems.

The contamination led to do not eat deer advisories within five miles of Clark's Marsh near the base and do not eat fish advisories for a portion of the Au Sable River and Van Etten Lake near Oscoda.



PFAS foam floats along Van Etten Creek after being dumped from a pipe of water treated at a granular activated carbon GAC plant from the former Wurtsmith Air Force Base in Oscoda on Wednesday, March 13, 2019. (Photo: Ryan Garza, Detroit Free Press)

The Air Force and EGLE continue to monitor PFAS levels around the base **and** announced a plan to accelerate treatment of water at the site in July. Sen. Gary Peters, D-Bloomfield Township, had pushed the Air Force to address the contamination but the agency at first sought to insulate itself from Michigan's environmental laws.

In 2017, testing found PFAS contamination at Camp Grayling, a training facility in northern Michigan. EGLE, the Michigan Army National Guard, and Department of Military and Veterans Affairs tested wells around the base and provided filtration systems or bottled water to residents whose water had high levels of PFAS.

Feds trying to tackle PFAS issue that's hurting Michigan families every day



PFAS-containing sample water is taken during work at Michigan State University's Fraunhofer Center for Coatings and Diamond Technologies on Sept. 13, 2018. (Photo: Derrick L. Turner, Michigan State University)

Peters and Michigan's congressional delegation all saw the need for federal action on PFAS.

“Michigan families are suffering every day from the very [real impacts of PFAS contamination and exposure](#), which is why we can’t afford to wait any longer to address this crisis,” Peters said in an email statement.

Rep. Tim Walberg, R-Tipton, said he’s working for more collaboration between agencies to get resources for PFAS research and response.

“PFAS contamination is a serious issue and we need to take action to protect public health and ensure our water supply is safe and clean,” Walberg said in an email statement.



Buy Photo

The Reed Drain and farmland just north of the Grand Ledge National Guard facility near M-100 and West Eaton Highway. (Photo: Matthew Dae Smith/Lansing State Journal)

There's no shortage of [federal legislation to deal with PFAS](#):

- The PFAS Federal Facility Accountability Act aims to increase state and federal coordination if contamination is found near federal installations.
- A provision that requires airports to move away from firefighting foams that contain PFAS.
- Provisions in the National Defense Authorization Act would force the Department of Defense to coordinate responses at military and National Guard installations and prohibit the use of foams containing PFAS by 2023.
- A mandate for the EPA to classify PFAS as a hazardous substance and use the Superfund law to leverage clean ups.

Despite federal efforts to deal with PFAS contamination, Peters said resistance from the Trump Administration could stall that work, particularly stopping the use of firefighting foams.

“I’m very concerned that the Trump Administration has objected to phasing out these foams,” Peters said. “I will continue pushing to ensure that PFAS is taken seriously and addressed effectively.”

Environmental crisis: [PFAS contamination is Michigan's biggest environmental crisis in 40 years](#)

Health impact: [Michigan health department gets \\$1 million federal grant to study PFAS health impact](#)

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