HEADWATERS

COLORADO FOUNDATION FOR WATER EDUCATION | FALL 2016

RENEWING TRUST IN THE SAFETY OF PUBLIC WATER

SETTING THE STANDARD

Geno Wasilewski will always remember the summer of 2016 as the one when Ferril Lake filled with slime.

As the owner of Wheel Fun Rentals in Denver's City Park, Wasilewski got a front-row seat to the spectacle, as a fibrous mat of algae smothered the shallow 24-acre lake, shutting down his paddle boat and kayak rental business for 41 days.

"It was ugly, green and nasty," he said. "You could not paddle a boat through it—it was like pushing a carpet."

Algal blooms have shown up at Ferril Lake for eight of the past 11 years. But 2016's episode, triggered by a steamy heat wave that warmed the nutrient-rich water to tepid bathtub temperature, was epic in proportion, covering up to 90 percent of the lake's surface.

While it was bad for business, that was as far as it went. The bloom did not contain cyanobacteria, also known as blue-green algae, certain types of which can release an assortment of potent toxins collectively referred to as cyanotoxins. The U.S. Environmental Protection Agency (EPA) links cyanotoxins to a range of health impacts such as nausea, kidney damage, respiratory paralysis and even death, particularly when drinking water becomes contaminated.

Across the country, drinking water crises are making the news—from toxic algae to lead poisoning to a growing number of communities facing contamination from a class of manmade chemicals known as perfluorinated compounds or PFCs—raising concerns about whether the nation's current drinking water regulations do enough to protect us.

While there are clear rules pertaining to 93 federally regulated drinking water contaminants, there are no national drinking water standards for algal cyanotoxins, PFCs, or a host of other potentially harmful

BY SAMANTHA TISDEL WRIGHT

CHRISTIAN FISCHER/WIKIMEDIA COMMONS

unregulated contaminants of emerging concern. These include hormones, antibiotics and anti-depressants, which scientists can now detect in increasingly minute quantities thanks to advances in technology.

Regulators maintain that standard treatment processes in place by public water systems provide some level of protection and removal of unregulated contaminants, even if they aren't the specific target of the treatment process. And although they are unregulated, utilities must test for select contaminants under EPA's Unregulated Contaminant Monitoring Rule, which the agency uses as a basis for evaluating candidates for future regulation. In 2012-2016, the list included PFCs, and the new proposed list of 30 unregulated contaminants for 2018-2021 includes cyanotoxins. For unregulated contaminants that aren't on the list, monitoring is voluntary, and most utilities, especially small rural ones, don't have the resources to address them specifically. Even well-resourced water utilities may be reluctant to monitor for unregulated contaminants because data on health risks is often lacking, making it difficult to describe any concerns to the public.

Adding to the complexity of the problem, regulating a new contaminant under the Safe Drinking Water Act is a ponderous, methodical, time- and resource-intensive process—which may explain why EPA has not added a new constituent to its list of regulated contaminants since 1996.

Our growing awareness of the unregulated contaminants that might be transmitted through our taps—even at very low levels—has bred an atmosphere of unease and distrust, leading more of the 286 million Americans who get their water from a community water system to filter or avoid tap water, buying bottled drinking water instead. While such precautions are necessary in times of crisis, water providers stress that, overall, our regulated municipal drinking water supplies are very safe.

"A lot of people don't drink their tap water which is a really sad thing, because we are making really good tap water," says Sherry Scaggiari, recent chair of the Colorado Water Utility Council, an alliance of drinking water providers throughout the state, organized under the auspices of the Rocky Mountain Section of the American Water Works Association.

Granted, the system isn't perfect. While advances in water management and sanitation have substantially reduced waterborne disease across the nation, outbreaks still occur, often from unregulated systems. In 2011–2012, for example, 32 drinking water–associated outbreaks were reported to the Centers for Disease Control and Prevention's (CDC) Waterborne Disease and Outbreak Surveillance System, though they weren't all associated with public water systems. Nevertheless, CDC concurs that the United States has one of the safest public drinking water supplies in the world.

Of course, it wasn't always that way.

In the Time of Cholera

In an ideal world there wouldn't be any contaminants in drinking water. But water is a product of its environment. As it flows, water dissolves naturally occurring minerals from the ground around it. Depending on the source, it might also pick up a variety of human- or animal-generated contaminants along the way.

We humans have been fouling our drinking water sources since ancient times, when great civilizations flowered alongside rivers that provided water for both agricultural and domestic use, while serving double-duty as sewers. The Romans were the first to solve this problem by diverting water from upstream sources via their famous aqueducts.

Fast-forward to 1850s-era London, and nearly everyone fetched their water from public wells that dotted the city squares or took it directly from the Thames, a sluggish tidal river into which London's sewers drained. Waterborne diseases such as cholera flourished, killing scores of people on a regular basis. Newspapers attributed the problem to "poisons in the miasmatic air emanating from the bowels of the earth," not the polluted water Victorian Londoners were consuming.

All of that changed in 1854, when Dr. John Snow traced a massive cholera outbreak in London to a well into which a nearby cesspool had been leaking the deadly pathogen—thus correctly deducing that cholera is conveyed by water. This realization triggered a new wave of constructing water sanitation facilities across Europe and, eventually, the United States.

Chlorination, often paired with some means of filtration, was the next milestone toward reducing infectious disease transmissions via water supply and is widely acclaimed as one of the most significant public health advances of the past millennium. With scores of American cities implementing the practice in the early 1900s, the results were dramatic. Waterborne diseases such as typhoid, dysentery and cholera that once lurked in untreated drinking water had practically disappeared by the mid-20th century. Drinking water standards developed alongside chlorination. The first water-related regulation in the country, adopted in 1912, prohibited use of the "common cup," a shared public drinking water cup, on trains and other modes of transportation.

The U.S. Public Health Service continued to create drinking water standards over the following five decades. But it wasn't until Congress passed the Safe Drinking Water Act in 1974, amid growing concern that drinking water supplies were becoming tainted by industrial activities, agriculture, wastewater effluent and even harmful byproducts of chlorination, that drinking water was comprehensively regulated in the United States. The act authorized the fledgling EPA to set legally binding standards for any contaminants in public water systems determined to significantly endanger public health, while establishing a cooperative program among local, state and federal agencies to ensure safe drinking water for the consumer.

Protecting Water Today

Through the Safe Drinking Water Act, EPA has established National Primary Drinking Water Regulations for 93 significant contaminants—from acrylamide to xylene—that may be present in drinking water provided by public systems throughout the country. These regulations set legally binding Maximum Contaminant Levels (MCLs) for each contaminant, along with prescribed treatment techniques applicable to every community water system serving residents year-round.

In setting an MCL, EPA must show that the proposed standard improves public health and is economically feasible to implement. Typically this is done through a cost-benefit analysis, comparing the cost of treatment to the value of lives saved or disease averted.

The process starts with extensive research to determine whether regulating a contaminant could curb health care costs or deaths, says Steve Via, director of federal relations for the American Water Works Association. EPA uses this data to set a public health goal, the maximum level of a contaminant in drinking water at which

PRECEDING PAGE A pond fills with blue-green algae, certain strains of which may harbor and release potent cyanotoxins linked by EPA to negative health effects. Although EPA does not yet regulate cyanotoxins, it issued drinking water health advisories in 2015, which Colorado followed.

The City of Boulder and other water providers reliant on supplies from the Colorado-Big Thompson Project monitor emerging contaminants at a level beyond most others in the state. Several times a year researchers test raw water samples for more than 100 different constituents including pesticides, pharmaceuticals, personal care products, and hormones. Overall their results are promising: Of all 100 contaminants tested for, about 90 aren't ever detected.

COURTESY CITY OF BOULDER

no known health effects would occur. Researchers then compare the potential benefits of regulation to the cost of treatment—considering the cost to the utility, to the state for oversight, and ultimately the cost at the household level.

In most cases, the enforceable standards regulators ultimately set are adjusted upward to accept a low level of health risk, due to the cost associated with completely eliminating the contaminant from the water supply. Arsenic, for example, a toxic, inorganic chemical in natural soil deposits as well as agricultural and industrial runoff, has an MCL of 0.01 milligrams per liter, even though the public health goal is zero. It's not a perfect process, but 42 years after its passage experts agree that the Safe Drinking Water Act has reduced illness and saved uncounted lives through the enforcement of these evolving standards.

Drinking water treatment plants across the nation protect their communities by treating their source water at a level that complies with all federally established MCLs before sending the water to consumers' taps. In Colorado, the Colorado Department of Public Health and Environment (CDPHE) implements the Safe Drinking Water Act. It's a big job; Colorado has about 2,000 water systems for CDPHE's 50 Safe Drinking Water Program employees to keep up with.

"How we monitor and ensure drinking water quality is [a] soup-to-nuts approach," explains Ron Falco of CDPHE's Water Quality Control Division, who oversees the effort. "It's a process that starts at the source water, extends through treatment processes all the way to the tap, and involves a range of services from funding to training to compliance oversight and enforcement."

The Colorado legislature has restricted Colorado's Water Quality Control Commission, the state body that develops water quality policy and rules, from adopting drinking water standards more stringent than federal regulations for regulated contaminants. To comply with federal requirements and protect public health, Colorado implements specific standards that pertain to drinking water disinfection, distribution and storage.

For example, a 2008 salmonella outbreak in Alamosa that sickened 1,300 people—likely caused by cracks in the city's storage tank combined with lack of disinfection—triggered statewide regulation updates pertaining to storage tanks, backflow prevention and other infrastructure controls, along with new mandates on minimum chlorine residual disinfectant concentration in the distribution system, to prevent a repeat occurrence. When it comes to managing compliance with both state and federal drinking water standards, CDPHE aims to act preventatively rather than responsively, Falco emphasizes. Yet in spite of all the safeguards in place to ensure drinking water complies with the Safe Drinking Water Act, serious issues occasionally arise. In many cases, these issues have to do with unregulated contaminants.

Cyanotoxins: A Blooming Threat

Cyanotoxins are one of the biggest as-yet-unregulated threats to safe drinking water. Nurtured by nutrients from agricultural and urban runoff, septic systems and warming weather, harmful algal blooms are oozing their way across the country's lakes and reservoirs. A 2007 EPA study found microcystins, one type of cyanotoxin, present in 30 percent of lakes sampled nationwide. Reports of blooms recorded by CDC suggest they are becoming ever more prevalent, sometimes making their way into drinking water sources.

In 2014, for example, a large toxic algal bloom invaded Lake Erie, shutting down Toledo's drinking water supply for three days. Stores sold out of bottled water; libraries, universities and restaurants closed; and the National Guard was called in to distribute water to the city's 400,000 panicky residents in the middle of the hot summer before the problem was resolved. In 2015, a 650-mile bloom on the Ohio River again threatened drinking water. In 2016, the City of Ingleside in Texas issued a 13-day, do-not-drink advisory for cyanotoxins in its drinking water, while states from Alaska to Florida reported more than 250 health advisories due to cyanotoxins, according to a September 2016 EPA memo. The health advisories closed beaches, restricted tourism, limited irrigation, and, in some cases, cautioned against drinking the water.

The CDC just launched its first algal bloom reporting system in June 2016, which will better quantify the severity of cyanotoxin-producing algae. Colorado, a headwaters state with relatively pristine waters, is not immune to the problem. Of the 150 lakes and reservoirs across the state sampled routinely by CDPHE, 10 to 15 regularly produce blue-green algal blooms that can sometimes release cyanotoxins.

"There have been harmful algal blooms in Cherry Creek, Stagecoach and DeWeese reservoirs, but they haven't had any impact to a drinking water supply so far," says Falco. "It is a statewide concern. Such outbreaks pose a risk to wildlife and the public."

EPA has been pressured to conduct more research on the issue and offer guidance about how to protect drinking water from the threat of cyanotoxins. In June 2015, the agency issued a drinking-water health advisory for microcystins and a related cyanotoxin called cylindrospermopsin. The advisory assigned nonregulatory threshold values to provide officials and water managers with guidance to better protect public health.

In the meantime, several Colorado agencies have teamed up to form a Harmful Algal Bloom Workgroup with the goal of creating guidance to assist drinking water systems in monitoring for the contaminant. While this has proved helpful, cyanotoxins are only a drop in the bucket of unregulated contaminants that have been detected in varying concentrations in Colorado's collective drinking water supply.

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water fact

In developing its 2009 Contaminant Candidate List (CCL 3) and evaluating potential regulatory needs, EPA culled data from 100-plus sources. Sources evaluated for its current draft CCL 4 include the Agency for Toxic Substances and Disease Registry, Center for Disease Control, National Academy of Sciences, National Toxicology Program, among many others.

A Perfluorinated Ordeal

Fountain, Colorado, and Hoosick Falls, New York, have more in common besides the fact that they were both named for local water features.

The two towns, one near Fountain Creek in the shadow of Colorado's iconic Pike's Peak in El Paso County, and the other on a bend of the Hoosick River near the New York-Vermont border, have recently joined the list of more than 60 communities across the country to discover their drinking water is contaminated with perfluorinated compounds (PFCs).

Hoosick Falls traces its contamination to a shuttered riverside plastics factory, now a proposed Superfund site, which used Teflon in many of the products it manufactured. Fountain's drinking water, along with that of the neighboring towns of Widefield and Security, was likely contaminated by chemical-laden firefighting foam used to prevent and extinguish fuel fires at the nearby Peterson Air Force Base.

While both communities have since switched to safer temporary drinking water sources—a complicated and expensive endeavor that, in Fountain's case, has involved purchasing and importing water from other municipalities—residents must now contemplate the potential long-term health effects of consuming the tainted water.

Manufacturers have used PFCs for decades in everyday products like water-resistant clothing, carpet, food packaging, and nonstick frying pans. But once introduced into the environment, PFCs stick around for a long, long time and find myriad pathways into our bodies—through food, soil, household products and drinking water.

Although there is growing evidence linking some types of cancer and other adverse health effects with PFCs, the family of chemicals is unregulated under the Safe Drinking Water Act so there is no legally binding limit as to how much of the contaminant may be present in drinking water.

But that could change.

Last May, EPA released updated health advisories on two of the best-known PFCs—PFOA and PFOS—recommending that communities keep concentrations in their water below 70 parts per trillion for the two chemicals combined. That's 10 times less than previous advisories.

The new advisories are nonenforceable, but as with similar cyanotoxin advisories that EPA released in 2015, they provide guidance for standards that states can adopt or communities can use when assessing the quality of their own drinking water. Colorado used the new PFC guidance in 2016 to help address the situation in El Paso County.

Balancing Rules and Emerging Risk

Now, EPA is engaged in a multiyear process to determine whether to go one step further and regulate PFCs and cyanotoxins under the Safe Drinking Water Act. Both types of pollutants are on EPA's Contaminant Candidate List, a watch list of more than 100 drinking water contaminants that occur in public water systems but are not subject to drinking water regulations. EPA uses this list, which is updated every five years, to prioritize research and data collection to determine whether a contaminant should be regulated.

Eventual regulation could require water providers to test for the contaminants, and if detected, treat the water before letting it flow to customers' taps.

Given the mounting evidence that PFCs and cyanotoxins pose health risks when they show up in our drinking water, it may seem like a no-brainer to move forward with enforceable regulation. But that's easier said than done.

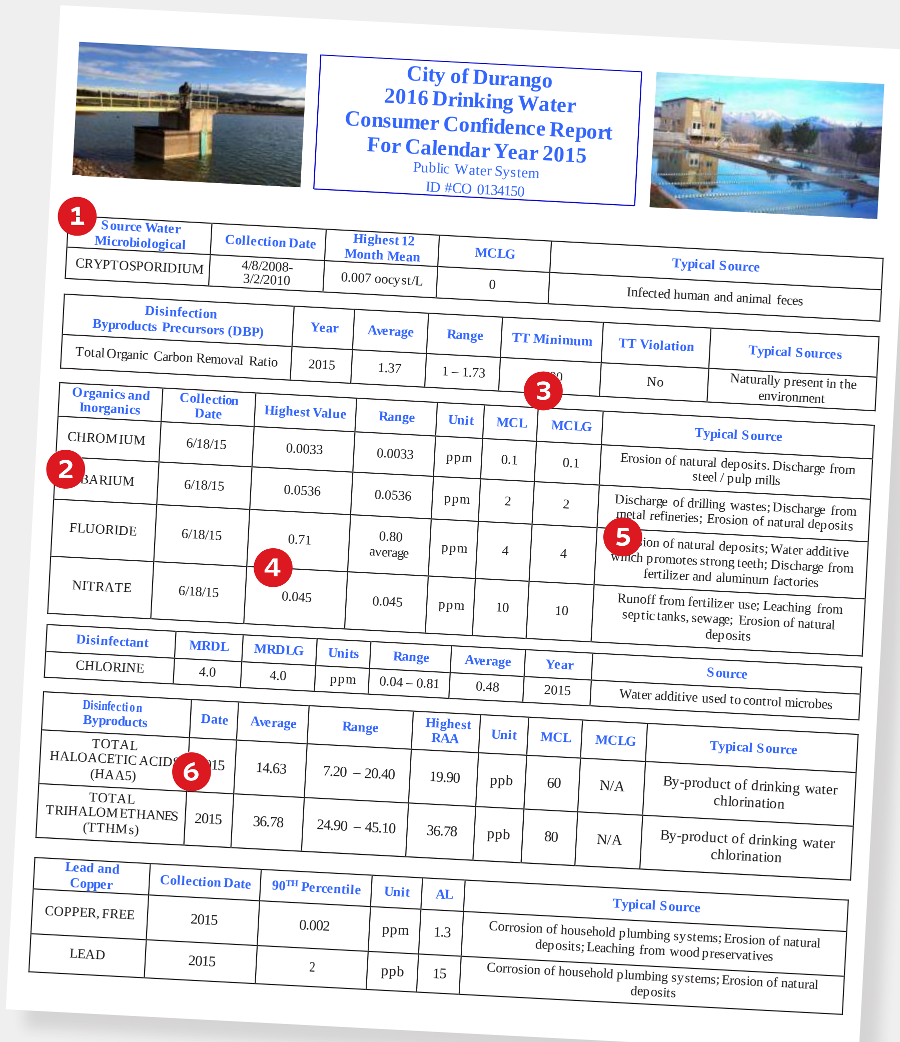
"In order for EPA to regulate a contaminant, they need to show that there would be a meaningful health risk reduction," explains Alice Fulmer, a research manager for the Water Research Foundation, a utility-governed cooperative that funds research relevant to drinking and wastewater utilities. From assessing frequency of occurrence to reviewing treatment techniques, determining target levels of contaminant reduction, performing cost-benefit analyses, and involving stakeholders in comment periods, the steps toward new regulation are time consuming and daunting.

"Before EPA proceeds with regulations, they need to demonstrate that it really would be worth the expense to pass on to water utilities and their customers," Fulmer says.

Waterspeak 101: How to Read a Consumer Confidence Report

Wondering what's in your water? Dig into your water provider's Consumer Confidence Report—the EPA requires that all community water systems deliver these reports to customers and to the Colorado Department of Public Health and Environment (CDPHE) annually.

No matter where you live, drinking water, even bottled water, is expected to contain trace amounts of contaminants. Consumer Confidence Reports identify the system's water sources, summarize the risks of contamination, identify the concentrations of any regulated contaminants found in the water, include warnings and information on potential health effects, explain how the system is addressing any violations, and point customers to additional sources of information. To demystify the jumble of numbers and acronyms found in a typical report, we've teased apart a section from Durango's 2015 report. Find the full report and look up yours on CDPHE's website at wqcdcompliance.com/ccr.



City of Durango
2016 Drinking Water
Consumer Confidence Report
For Calendar Year 2015
Public Water System
ID #CO 0134150

Source Water Microbiological	Collection Date	Highest 12 Month Mean	MCLG	Typical Source
CRYPTOSPORIDIUM	4/8/2008-3/2/2010	0.007 oocyst/L	0	Infected human and animal feces

Disinfection Byproducts Precursors (DBP)	Year	Average	Range	TT Minimum	TT Violation	Typical Sources
Total Organic Carbon Removal Ratio	2015	1.37	1 – 1.73	[illegible]	No	Naturally present in the environment

Organics and Inorganics	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
CHROMIUM	6/18/15	0.0033	0.0033	ppm	0.1	0.1	Erosion of natural deposits. Discharge from steel / pulp mills
BARIUM	6/18/15	0.0536	0.0536	ppm	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
FLUORIDE	6/18/15	0.71	0.80 average	ppm	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
NITRATE	6/18/15	0.045	0.045	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Disinfectant	MRDL	MRDLG	Units	Range	Average	Year	Source
CHLORINE	4.0	4.0	ppm	0.04 – 0.81	0.48	2015	Water additive used to control microbes

Disinfection Byproducts	Date	Average	Range	Highest RAA	Unit	MCL	MCLG	Typical Source
TOTAL HALOACETIC ACIDS (HAA5)	[illegible]15	14.63	7.20 – 20.40	19.90	ppb	60	N/A	By-product of drinking water chlorination
TOTAL TRIHALOMETHANES (TTHMs)	2015	36.78	24.90 – 45.10	36.78	ppb	80	N/A	By-product of drinking water chlorination

Lead and Copper	Collection Date	90TH Percentile	Unit	AL	Typical Source
COPPER, FREE	2015	0.002	ppm	1.3	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
LEAD	2015	2	ppb	15	Corrosion of household plumbing systems; Erosion of natural deposits

1 Contaminants are broken down by category. In addition to those listed here, those categories may include microbiological contaminants, radioactive contaminants, inorganic contaminants, synthetic organic contaminants, and volatile organic contaminants.

2 Only detected contaminants are listed in Consumer Confidence reports. If you don't see a contaminant listed, it wasn't detected in your system's water.

3 There's typically a difference between the Maximum Contaminant Level (MCL) and Maximum Contaminant Level Goal (MCLG). The MCL is the highest level of a contaminant allowed in drinking water, whereas the MCLG is the level below which there is no expected health risk. MCLs are set as close as is feasible to MCLGs to balance health risk with cost and technology.

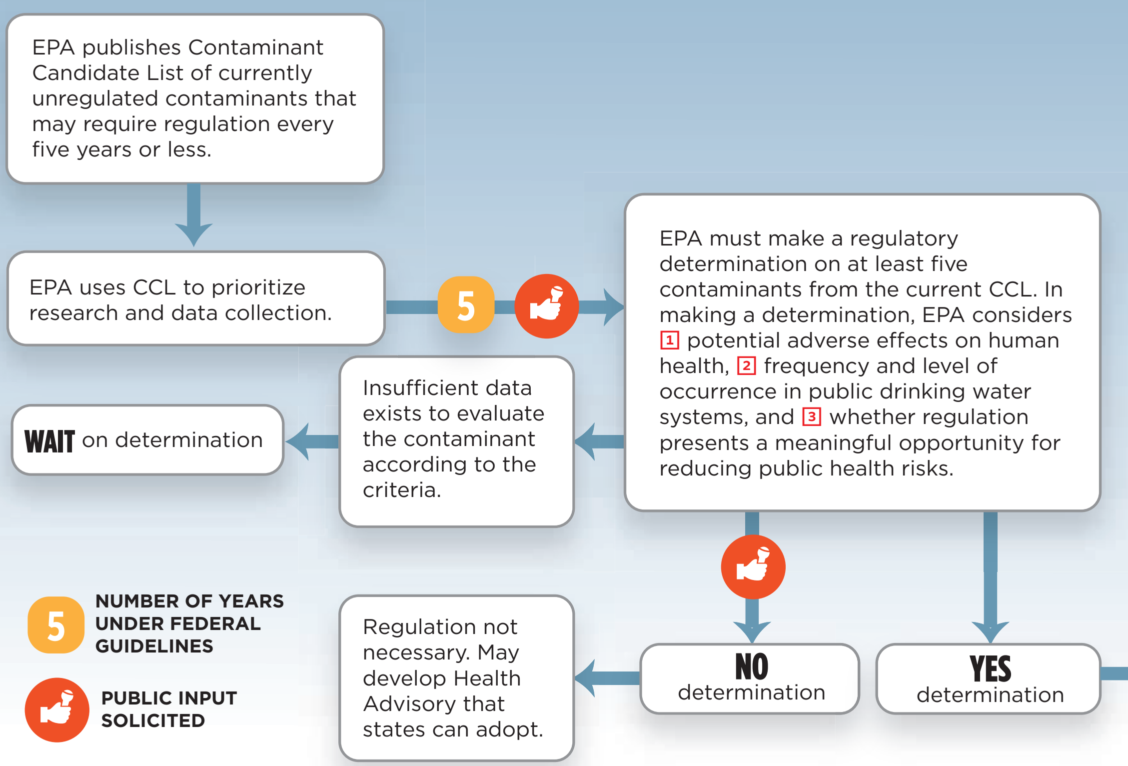
4 Even if a contaminant is detected, it doesn't mean that there's a known health risk associated with the level of detection. In this report, compare the highest detected value of nitrate, at 0.045 ppm, to the MCL and MCLG of 10 ppm. That's a significant difference.

5 Many contaminants are a product of their environment, but not all. In this case, fluoride is added to Durango's water to promote oral health. The water treatment plant adjusts the level of fluoride, aiming for 0.7 mg/L, which the EPA considers to be the optimum amount for preventing tooth decay without harming human health.

6 Monitoring is sometimes required less than once per year, as is the case with these radionuclides. Infrequent monitoring may be allowed when concentrations of certain contaminants are not expected to vary from year to year or the system isn't considered vulnerable to a specific type of contamination.

How are Contaminants Regulated in Drinking Water?

Under the authority of the Safe Drinking Water Act, the Environmental Protection Agency has established legally enforceable standards known as National Primary Drinking Water Regulations for 93 microbial and chemical contaminants. The Maximum Contaminant Levels (MCLs) and treatment techniques embedded in these regulations apply to public water systems nationwide. The current draft Contaminant Candidate List (CCL) developed by EPA in 2015 contains 100 chemicals or chemical groups and 12 microbial contaminants for which future regulation may be considered. The Colorado Department of Public Health and Environment (CDPHE) implements and enforces the national regulations as well as the Colorado Primary Drinking Water Regulations in Colorado.



One of the essential conundrums in drinking water management today is that anything we use and consume may end up in the water that flows out of our taps. The sheer number of chemicals that exist presents a unique challenge when it comes to assessing human health risks associated with exposure.

"The Chemical Abstract Services body just assigned the 100 millionth registry number to a substance," says Fulmer.

Against this backdrop, EPA is challenged with trying to determine which unregulated chemicals are relevant to water and wastewater and which warrant eventual regulation.

Beyond cyanotoxins and PFCs, the agency is currently evaluating an array of contaminants of emerging concern (CECs) for possible regulation. CECs are chemicals that are not commonly monitored but have the potential to enter our environment, end up in our source water, and cause known or suspected health effects. Emerging contaminants can include personal care products, veterinary medicines, antibiotics, hormones, endocrine disrupters, industrial effluents, and many others. As new drugs, pesticides and personal care products are introduced into the market each year, public exposure to these chemicals comes from the products themselves, and the relative risk of exposure in drinking water. In the meantime, Fulmer stresses, "Utilities want to make sure that they are protecting public and ecological health and being responsive to their customers' needs."

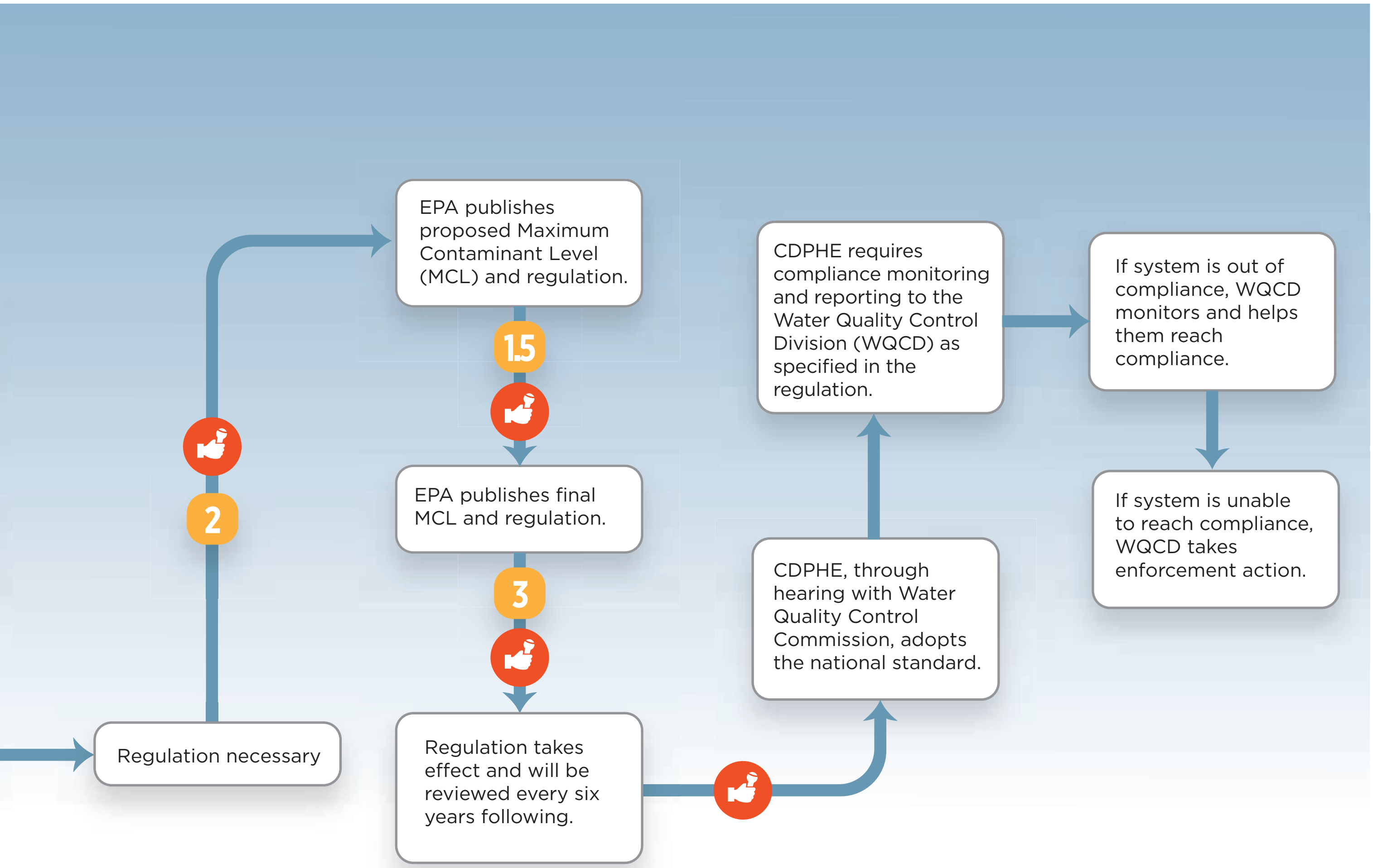
This, too, can be a challenge, particularly in states like Colorado that have a preponderance of small, rural drinking water systems. Many, but not all, of these rely on water from wells and, according to regulators, have little risk of contamination by algal blooms or CECs. But most of Colorado's population gets its drinking water from plants that use conventional treatment methods involving coagulation, filtration, aeration/oxidation and disinfection, and Water Research Foundation tudies evaluating strategies for removing CECs from water have found that such techniques don't remove some of the most persistent emerging contaminants. The only treatment method proven to completely remove CECs from drinking water is reverse osmosis. Due to cost, it is beyond the means of most community water systems. Granular activated carbon, nanofiltration, and ion exchange can remove some CECs from water, but these techniques are also costly and not completely effective.

Although emerging contaminant detection is improving, relatively little research has been done on the health effects these contaminants could have when consumed in trace quantities.

As "funny fish" with altered sex organs have shown up in some Colorado streams, there is concern that even very low levels of hormones in drinking water could disrupt human hormonal balance by mimicking naturally released hormones that trigger physical responses.

But in the end, Fulmer warns, it may not be scientifically or economically feasible to completely remove such contaminants from the water.

"We are getting to a point where there will not be such a thing as a zero measurement,"



SOURCES: U.S. ENVIRONMENTAL PROTECTION AGENCY AND COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Fulmer predicts. "We will have to begin accepting minute concentrations of certain chemicals or determining what levels are safe or unsafe. Unfortunately, that research costs a lot of money. We are sort of playing catch-up with the number of chemicals that are in use today."

Drinking water, of course, is not the only exposure pathway for emerging contaminants to enter our bodies. "The truth is, it's pretty hard not to get exposed," says U.S. Geological Survey research hydrologist William Battaglin, who monitors CECs in Colorado water. From drinking caffeinated beverages to handling receipts to attending to the chores of daily life, we are constantly exposed to these chemicals, says Battaglin. And, he adds, new regulations under the Safe Drinking Water Act may not be the only, or best, way to deal with them. "Regulatory action can keep a problem from getting worse. But it will take too long to regulate some of the personal care products and other things that are already on the market. They are going to be in your products [and water] until people want them out."

That can happen quickly. When consumers decided they didn't want Bisphenol A, or BPA, in their water bottles, for example, industry removed the offending additive much faster than EPA could have acted.

The Bottom Line

While the process to regulate new contaminants can seem slow, it ensures that any new standards are science-based, vetted by stakeholders, and not politically motivated—which is important because every new regulation places an added burden and expense on water systems. And that expense, ultimately, is shouldered by consumers.

Which begs the question, are consumers willing to pay the price for cleaner water?

Scaggiari is doubtful. "Generally, people aren't willing to pay much more for their water. They already think they are being over-charged," she says, adding that new treatment costs are hard to justify without new regulations to mandate them.

Perhaps the best solution is to become more vigilant about protecting our source waters, be that through consumer activism or stricter industry regulations to prevent contamination. In the meantime, we are stuck with the regulatory processes, and the drinking water that we have, which, with some notable exceptions, is really pretty darn good.

Ultimately, from the perspective of the Colorado Water Utility Council, there is a balance to strike between affordability and reducing risk, Scaggiari says. "Can we do better? Sure. Are there failing systems? Probably. Is the system failing? Absolutely not. At some point you could get to a place of unfunded mandates where it becomes impossible for smaller systems to comply. Then where are people going to get their water?" ■

TAKE THE NEXT STEP

Learn more about emerging contaminants through the Consortium for Research and Education on Emerging Contaminants at creec.net. Then watch for the Emerging Contaminants Summit coming to Windsor in March 2018.