FLINT, Mich. — As I walked into Jackie Pemberton’s petite white house in the southeast corner of Flint, she apologized for the mess (there wasn’t one) and offered me a cup of coffee. “River water all right?” her husband, John, asked without a hint of irony. Jackie burst into laughter.

Jackie has lived in Flint for much of the past 48 years, and for many of those, she owned a drain-cleaning business that counted several industrial factories as clients. “I saw what they put down those drains,” she told me, shaking her shoulder-length salt-and-pepper hair in disgust. So when the city switched its water source from Lake Huron to the murky waters that ran through Flint in April of 2014, she refused to drink it. The idea of it made her ill, she said, thinking about all the industrial chemicals, sewage and road salt that had made their way into the river over the years. John, however, keeps an old soda bottle filled with water by his side whenever he’s home, and he filled it with tap water frequently. Mindful of her limited budget as a retiree, Jackie gave in after six or eight weeks and started drinking the water as well.

By late summer, they both started having stomach problems, losing hair and developing rashes, as did several of their children and grandchildren who either lived elsewhere in the city or periodically came to stay with them. In August, E. coli was found in the city’s water, forcing Flint to issue multiple advisories to residents to boil the water before use. By October, the Pembertons had become regulars at City Council meetings along with a group of other residents concerned about water that smelled of sulfur and chlorine, often came out of the tap tinted the color of urine or rust, and appeared to be causing a long list of health concerns.

“I drank the water for eight or nine months,” John said. “In the poor parts of town, those people drank it for one and a half years. Some still are.”

Today, we know that those health concerns include poisoning from a well-understood neurotoxin: lead. That realization has led to international outrage, protests from Flint residents, and the resignation of several federal, state and local employees, though not as many as some Flint residents would like. More than a year after residents started sounding alarm bells, it’s now clear that employees at the state’s
Department of Environmental Quality collected insufficient data and ignored the warning signs visible in what they did collect. In the process, they allowed the residents of Flint to be poisoned.

Officials at the Michigan Department of Environmental Quality, the agency in charge of making sure water is safe in the state, made a series of decisions that had disastrous consequences:

- Against federal guidelines, they chose not to require the Flint water plant to use optimized corrosion control, despite telling the Environmental Protection Agency they were doing so in an email on Feb. 27, 2015.
- They took few samples and took them from the wrong places, using a protocol known to miss important sources of lead, which some say didn’t comply with a 25-year-old law meant to prevent lead exposure in residential water.
- They threw out two samples whose inclusion would have put more than 10 percent of the tests above what’s known as the “actionable level” of lead, 15 parts per billion. Had the DEQ not done so, the city would have been required to warn residents that there was a problem with lead in the water back in the summer of 2015, or possibly earlier.
- Because of those transgressions, the Flint River’s corrosive water ate through the protective film inside the city’s old pipes, allowing odorless, tasteless lead to leach into the water. They are also what has featured in most of the news coverage of Flint: important questions about which officials knew what, and when. Gov. Rick Snyder has said the failures here had nothing to do with the fact that Flint’s residents are largely poor and majority black, but that didn’t assuage many who feel this wouldn’t have happened in a wealthier, whiter city.
- Also worthy of examination is how a wealth of other data and information, gathered by the city’s residents, was largely ignored. When the county declared a public health emergency on Oct. 1, 2015, it was not a revelation for many residents. They had been fighting for months to convince officials that something was wrong. Instead of heeding those reports, priority was given to the official data — data that was flawed and shortsighted. As a result, the percentage of children with elevated blood lead levels in Flint doubled.
- If it weren’t for a few dozen residents and a handful of crusading experts who pushed back against the official narrative, we still wouldn’t know the truth.

### The difference two data points can make
The Michigan Department of Environmental Quality's analysis of Flint’s water supply

<table>
<thead>
<tr>
<th>LEAD LEVELS IN WATER SAMPLES</th>
<th>NOT DETECTABLE</th>
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<tbody>
<tr>
<td>15 ppb</td>
<td>25</td>
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<td>EPA ACTION LEVEL</td>
<td>50</td>
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If the DEQ had included all of the water samples it took, federal law would have demanded further steps...

...but the exclusion of two high-lead samples put the city’s water supply below the threshold for mandatory action.

<table>
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<tr>
<th>PERCENTAGE OF SAMPLES EXCEEDING 15 PPB</th>
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<td>10%</td>
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<td>75</td>
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ACTION REQUIRED →

**Source:** Michigan Department of Environmental Quality

**Flythirtyeight**
The Flint River enters the city at its northeast corner through wooded parkland. It winds past the city’s water treatment plant, with its giant cartoon-spaceship-shaped water tower, and then runs along an industrial stretch that was home to Buick City, a sprawling 400-acre complex that employed more than 26,000 people at its peak. Most of the buildings have been torn down since the complex shuttered in 1999, its demise part of Flint’s transition from a working-class city of nearly 200,000 in 1960 to one of about 99,000. As of 2013, the median household income was $24,834, half the statewide median, and 42 percent of residents lived below the federal poverty level. From the old Buick City footprint, the river crosses the city center, running through the University of Michigan’s Flint campus and underneath Chevrolet Avenue, where workers marched in victory in 1937 after a sit-down strike that transformed the newly formed United Automobile Workers into a powerful union.

The person who decided to use the river as a water source was one of a succession of emergency managers in Flint, Darnell Earley. Earley was appointed under a controversial law that allows the governor to install managers whose power trumps that of elected officials. Over the last five years, more than 50 percent of Michigan’s black population has, at some point, lived in a city with a state-installed manager. For nearly 50 years, the city bought its water from Detroit, which pumped it out of Lake Huron. But in 2013, the city voted to join a new pipeline being built to the lake, prompting Detroit to cancel its agreement. Rather than agree to a new short-term contract with Detroit, Earley decided to use the river that runs through the heart of the cash-strapped city. The state treasurer signed off on the move.

The switch has been described as an effort to save money, but Flint’s water system hadn’t been a drain on the budget. In fact, the water paid for itself and then some, paying out about $1.5 million annually to the city’s general fund in the years leading up to the switch, according to Dayne Walling, who was mayor in 2009-15. Walling toasted the new source on April 25, 2014, the day of the switch. When residents started to complain of foul odors and strange tastes that summer, Walling told a local newspaper that they were “wasting their precious money buying bottled water.” But last week, sitting in a cafe just a couple of blocks from the river, he expressed regret that he hadn’t challenged state and federal officials throughout the last year and a half who repeatedly told him everything was OK. “Even though we disagreed on many things,” he said of Earley, “I fundamentally trusted that it would be done right. That was a mistake.”

LeeAnne Walters, a 37-year-old mother of four with a self-described “Jersey girl” persistence, started losing her eyelashes sometime in the summer of 2014. She also noticed that one of her 3-year-old twins, Gavin, who already had a compromised immune system, was constantly ill and had stopped growing, in addition to the rashes the rest of her kids were developing. In January she received a notice that there were TTHMs in the water, a byproduct of the chlorine that was being used to clear up the E. coli that had been found in the city’s water on multiple occasions over the summer. She joined other residents at public forums with the emergency manager, bringing along a jug of brown water that came from her tap. State and city officials repeated the familiar phrase that it met federal standards — even after a local General Motors plant had...
been allowed to switch back to Detroit’s water in October because the river water was corroding machine parts.

But research told Walters she was getting half-truths. She stayed up late into the night after the kids were in bed, learning everything she could about what might be happening to her family and friends. “I decided, I guess I got to figure the science part of this, because you can’t argue with the science,” she told me over the phone from her new home in Virginia. “If you don’t know what you’re talking about, they can say whatever they want. But if you know what you’re talking about, then they have to listen.”

In the last decade or so, researchers have learned a lot about how to gather water samples that will accurately measure risk, and Walters now understands the science of water testing better than many experts. She explained to me in great detail the many ways the city’s testing protocol underestimated the risk:

- The city’s original target was 100 samples, the federally required number for a city with more than 100,000 people and the number that DEQ agreed to with the city. But after city workers had trouble collecting that many samples, the DEQ dropped the requirement to 60, saying Flint’s population of just more than 99,000 was under the six-figure mark. Scientific experiments aren’t supposed to change protocol partway through.
- Residents were asked to test water after it had been sitting for more than six hours, as required by federal law, but were also asked to flush the systems the night before. This “pre-flush” is known to lower detection in samples.
- Samples were collected in bottles with a small neck, which requires filling with a small stream, rather than opening the tap as you would when you fill a glass of water. The slower the stream, the less likely lead is to corrode from the pipe into the sample.
- The law requires that the city test the most at-risk homes, but it didn’t have a record of where its lead service pipes were (lead is often introduced in corroded pipes as it travels to homes), or which homes were likely to have lead pipes.
- In February, Walters asked the city to test her home’s water, and says she got a panicked phone call telling her the water samples found lead levels of 104 and 397 parts per billion, far above the threshold of 15 ppb that puts a federally mandated response plan into motion. (The amount of iron in the water exceeded measurement capabilities.) The DEQ would later tell the EPA the lead was coming from her indoor plumbing, which was rather unlikely since the house had been plumbed with plastic pipes when the Walters family bought it a few years ago, before the city started using river water. She also had Gavin’s blood lead levels tested again, and the results were disturbing. They had gone from 2 micrograms per deciliter (µg/dL) before the switch to the Flint River to 6.5 µg/dL after. Although no lead exposure is considered safe, anything above 5 µg/dL triggers a public health response in the United States.
- Del Toral told Walters that he didn’t understand how the lead in her water could be so high when the city was using corrosion control. Walters told him that was easy — they weren’t using corrosion control.

Lead is an extensively studied neurotoxin, and decades of research show that there is no safe level of exposure. Although most elevated blood lead levels today are not high enough to cause immediate problems, there are many long-term effects of lead exposure, even for small doses. While it’s impossible to say what effect a low exposure will have on an individual child, research is fairly clear on what it does to a population. It causes miscarriages and low birth weight for babies, and it shifts the entire IQ of a population down a few points. It’s also believed to cause decreases in impulse control and increases the incidence of attention deficit hyperactivity disorder, learning disabilities and potentially violent behavior. Newer research suggests that exposure can also affect DNA, carrying damage on to the children and grandchildren of those exposed. The effects of low exposure on adults haven’t been studied as closely, but they include an increased risk of hypertension and decrease in cognitive function. In a
city like Flint, rife with poverty, high violent crime rates and low high school graduation rates, lead exposure is yet another layer of trauma.

Walters says when she brought her concerns to city officials, they told her that they were following the law, and if she had a problem, she could take it up with the EPA. So she did.

She wrote to several people at the regional EPA office, including Miguel Del Toral, who happens to be a national expert on the Lead and Copper Rule (LCR). He was familiar with how sampling protocol in the LCR often misses the highest lead levels and had published a study about it in Chicago. In one of many conversations, Del Toral told Walters that he didn’t understand how the lead in her water could be so high when the city was using corrosion control. Walters told him that was easy — they weren’t using corrosion control.

You can read the rest of the article at the link at the beginning of the article.

Four more officials charged with felonies in Flint water crisis


By Brady Dennis December 20, 2016

Michigan Attorney General Bill Schuette filed another round of criminal charges Tuesday in the ongoing water crisis in Flint, the latest action in a nearly year-long investigation to hold accountable those responsible for a disaster that exposed thousands of children to dangerously high lead levels.

Schuette announced felony charges against four people, including two former state-appointed emergency managers who oversaw a disastrous switch of the city’s drinking water source to the Flint River. Darnell Earley, whom Gov. Rick Snyder (R) put in charge of the city’s finances from late 2013 through early 2015, and Gerald Ambrose, who held the emergency manager position through April 2015, could face decades in prison.

Prosecutors allege that the emergency managers conspired with two Flint employees, public works Superintendent Howard Croft and utilities Administrator Daugherty Johnson, to enter into a contract under false pretenses that bound the city to use the river for its drinking water, even though the local water plant was in no condition to properly deliver safe water to residents.

Even after the officials were told repeatedly that the Flint water department wasn’t ready to make the switch in 2014 and that the city should keep getting its water from Detroit, investigators say Earley and Ambrose pushed the change forward in a bid to save money. The decision ultimately exposed children and other residents to lead-tainted water and resulted in the death of a dozen people from Legionnaire’s disease.

“This fixation [on money] has cost lives. This fixation came at the expense of protecting the health and safety of Flint,” Schuette said in a news conference Tuesday. “It’s all about numbers over people,
money over health. . . . Flint was a casualty of arrogance, disdain and a failure of management. An absence of accountability.”

The four men charged Tuesday all face felony charges of false pretenses and conspiracy to commit false pretenses. Earley and Ambrose also face charges of willful neglect of duty and misconduct in office. Investigators have now filed 43 criminal charges against 13 current and former state and local officials.

In April, Schuette announced initial charges against three state and local workers for their roles in the water crisis. That included more than a dozen separate counts against two officials at the Michigan Department of Environmental Quality, as well as a Flint water quality supervisor. They were accused of misconduct in office and tampering with evidence, as well as for willful neglect of duty.

In June, Schuette filed civil charges against two engineering firms that allegedly “botched” their work on the water supply system, contributing to the crisis.

The following month, six more state employees were charged with misconduct in office for their alleged roles in contaminating Flint’s water supply. Those charges, against three Department of Health and Human Services employees and three from the Department of Environmental Quality, included claims that some had hid or disregarded test results showing high lead levels in the blood of Flint residents and had tampered with water test results sent to federal officials.

So far, Schuette said Tuesday, some defendants have entered pleas, while other cases are proceeding toward trial.

The disaster in Flint, a once-thriving industrial city of about 95,000, began nearly three years ago. For decades, the city had used water piped in from Lake Huron, with anti-corrosion chemicals added along the way by Detroit water officials.

In April 2014, with the city under the control of Earley, an emergency manager appointed by the governor, officials followed through on an earlier decision to switch to the Flint River to save money. According to prosecutors, they did so while ignoring “warnings and test results” that the plant was unable to guarantee safe water to residents. The state’s environmental quality agency also failed to ensure that corrosion-control additives were part of the new water supply, which allowed lead and other substances such as iron to leach from aging pipes.

Residents began to complain almost immediately of brown, smelly water that burned their eyes and left them with rashes. Public officials repeatedly issued reassurances that the water was safe. Only after researchers in Flint publicly disclosed tests showing spikes in lead levels in children’s blood did Flint switch back to Detroit water. Even now, more than a year later, the tap water there has not been declared safe to drink, and many city residents are still drinking, bathing and cooking with bottled water.

While investigators Tuesday said their inquiry is beginning to wind down, they vowed to press on until the reckoning they promised nearly a year ago is complete.

“We’re much closer to the end than we are to the beginning, but we’re not at the end,” said Andrew Arena, the chief investigator in the probe. “There are some people out there right now who know that they’ve done wrong, and they know we’re coming after them. They’re not going to have a very merry Christmas.”