

Invisible and Insidious: A Study of Water Contamination in Hoosick Falls, NY



Maya Cohn, Ella Sampou, and Anika Verma

Advised by Professor Bob Turner, PhD

Senior Capstone 2017

Skidmore College

Table of Contents

Introduction...	2
Research Questions...	2
Timeline of Events in Hoosick Falls...	3
Literature Review...	5
Methods...	12
Results...	14
Discussion...	25
Where Are We Now?. . .	30
Suggestions for Future Studies...	31
Conclusion...	33
Appendix A: Survey...	37
Appendix B: Interview Questions...	43
References...	48

Introduction

Hoosick Falls is a small village of less than 3,500 people in upstate New York, almost on the Vermont border (U.S. Census Bureau, 2015). A strong community in a beautiful location, Hoosick Falls has historically been, immeasurably, a great place to live. The local Saint Gobain McCaffrey Street manufacturing plant employs over 200 village residents, providing a good salary for low-skill labor. But the residents of Hoosick Falls always seemed to have rare health issues and unusually short lifespans (Hackett, Baker, Martinez, Allen, 2017). In 2014, village native Michael Hickey, prompted by his father's death, began to research the link between Teflon and cancer. He found that PFOA, the man-made chemical synthesized at the Saint Gobain factory, was the likely culprit, and that it existed in the municipal water supply above EPA recommended levels (EPA, 2017). Three years later, the water contamination remains a pervasive issue for Hoosick Falls residents. In this paper, we consider the political and social implications of water contamination, using Hoosick Falls as a case study. We explore the sociological impact of the insidious relationship between a corporation that has poisoned village residents in a place where the residents depend on the company for employment. We also mapped out the expansive responses to PFOA contamination on the local, state, and federal levels.

The research questions guiding this study include:

1. How does an environmental disaster like the Hoosick Falls water contamination affect how citizens think about environmental problems, social justice, and the role of government?
 - a. To whom do residents assign fault or blame?
 - b. Who do residents hold responsible for repairing/restoring their community?

Individuals? Institutions?

- c. What do residents think about the long-term implications for health, economic and social prospects for community, political concern of government, potential of drinking water?
 - d. What would success look like to residents? What do residents want? Who do residents want it from?
 - e. How does the lack of visibility of PFOA contamination affect how they understand the problem?
2. How does an environmental disaster like Hoosick Falls stimulate and foster political action? Where is the change happening, and where is it not?

Timeline of Events in Hoosick Falls

1940	PFOA becomes popular in industrial and household non-stick and heat-resistant plastic products.
1956	McCaffrey Street plant opens.
1986-1999	Allied Signal Inc (Honeywell) operates the McCaffrey St. plant.
1999	Saint-Gobain buys McCaffrey St. plant.
2003	Saint-Gobain phases out PFOA.
2006	EPA conducts Carcinogen Risk Assessment and concludes PFOA is “likely to be carcinogenic to humans.”

August 2014	Local residents meet with Village Mayor Dave Borge to ask for water sampling after an increase of rare cancer deaths. Rensselaer County refers the Village to the state Health Department who claims water sampling is unnecessary; however, the Village decides to undergo water sampling without the support of the state Health Department. A county health official from the state Health Department's Bureau of Water Supply Protection, claims that PFOA is an "unregulated contaminant" and the village is "not required to conduct any remedial activity if not detected."
October 2014	Water samples are taken for analysis and PFOA levels range from 180-540 parts per trillion. Since the EPA states non-toxic short-term exposure advisory is at 400 ppt maximum, village officials decide to that wells above 400 ppt cannot be in use. In November 2014, village representatives are notified that their current water system treatment plant cannot remove PFOA from drinking water.
December 2014	Rensselaer County of Department of Health releases a letter stating the village is "in compliance" with EPA, New York State Department of Health, and Rensselaer County of Department of Health safe drinking water standards.
January 2014	Local residents start a grassroots effort called Healthy Hoosick Water to pressure the village and Saint-Gobain (the polluter) to conduct their own water testing. This testing reveals that PFOA groundwater contamination is upwards of 18,000 parts per trillion, 45 times the recommended 400 ppt safe short-term exposure level.
July 2015	The Village searches for water treatment options to remove PFOA from municipal water and settles on a Granulated Activated Carbon (GAC) system, the most effective and efficient way to remove PFOA from municipal water systems with more than 90% of all PFOA, PFOS and PFNA compounds removed. This treatment is proposed by the civil engineering group MRB and is the same treatment method done in New Jersey's municipal water systems that also suffered from PFOA contamination. However, the state Environmental Facilities Corporation notifies the Village that they are ineligible for state or federal funding since PFOA is an unregulated contaminant. Mayor Borge's requests for a meeting with Governor Andrew Cuomo to discuss GAC funding is denied.

January 2016	Saint Gobain funds a temporary treatment system. The Department of Environmental Conservation (DEC) states that Saint-Gobain and Honeywell are the two polluters that PFOA contamination can be traced back to. Saint-Gobain states that there are multiple factors to which PFOA can be traced back to—not just them—and the DEC agrees.
May 2016	EPA issues a new PFOA lifetime drinking water health advisory at 70 ppt. State government representatives disagree over whether to hold hearings about PFOA contamination, and R-Schaghticoke Assemblyman Steve McLaughlin garners constituent support over wanting to hold hearings.
June 2016	Several local residents tweet their children’s PFOA levels. Public outrage gets representatives agree to hold hearings.
September 2016	McCaffrey Street plant becomes a federal Superfund listing.
September 2016	State Senate hearings.
December 2016	Hoosick Falls Village Board reaches an undisclosed draft settlement with Saint-Gobain and Honeywell. Will vote on the settlement on December 28, 2016 (delayed due to public outrage about not being consulted about the settlement).

(Times Union, 2016)

History of Industry in Hoosick Falls

According to the town historian, Philip Leonard, “Hoosick Falls was always loaded with manufacturing” (Nielsen, 2016). The Walter A. Wood Mowing and Reaping Company made cast iron plows in present-day downtown Hoosick Falls between 1865 and 1924 (Filkins, 2007). At its peak in 1869, the company manufactured 23,000 machines. However, the factories suffered from massive fires in 1860 and 1870. The new factories built were located along present-day Mechanic Street.

Another manufacturing corporation in Hoosick Falls, the Lovejoy Chaplet Corporation, can be traced back to 1925. It is the longest continuously running manufacturing company in the Town of Hoosick. The present-day Lovejoy Chaplet Corporation currently manufactures single spindle turning equipment and high-speed machine centers (Hoosick History, 2017). The corporation is located along River Street in Hoosick Falls.

Then, of course, there is the history of the McCafferty street plant, the source of the PFOA contamination (Nielsen, 2016). In 1955, Dodge Fibers bought the plant. The plant quickly switched ownership in 1967 when it was bought by Oak. Then Allied Signal, present-day Honeywell, purchased the property in 1988, and it changed hands for the final time in 1999, when Saint Gobain, the current owners, purchased the plant.

Implications of PFOA Exposure

Since the 1940s, perfluorooctanoic acid, abbreviated as PFOA, a human-made compound, has been an active ingredient in plastic production, particularly in non-stick and heat resistant plastic products (Times Union, 2016). By 2005, the scientific community began to suspect that PFOA could be dangerous to human health. The Environmental Protection Agency (EPA) Science Advisory Board released a draft risk assessment stating PFOA could be a carcinogen (Steenland, Fletcher, Saviz, 2010; Times Union, 2016). Approximately five years later, residents in West Virginia filed a high-profile class action lawsuit against the American conglomerate DuPont for PFOA (C8) contamination (Steenland, Fletcher, Saviz, 2010). The C8 Class Action Settlement Agreement sponsored research and the findings became a landmark case for PFOA research. While the study could not determine a “probable link” between PFOA and adverse health effects, the findings suggested a correlation between higher rates of cancer

(testicular, kidney and thyroid) as well as high cholesterol (Steenland, Fletcher, Saviz, 2010; American Cancer Society, 2016).

PFOA is a synthetic perfluorinated carboxylic acid and fluorosurfactant often used in industrial manufacturing as well as household materials such as flame retardants, non-stick surfaces, brake pad liners, stain repellants, and as a material to lessen friction in machines. Most Americans have come in contact with this chemical at some point in their lives. The chemical equation of PFOA is $C_8HF_{15}O_2$, and is a carbon fluorine chain capped by an oxygen atom and a hydroxide atom (Vierke, et al., 2012).

PFOA is widely dispersed in water supplies around the world, and studies estimate that 98% of Americans have PFOA in their blood, regardless of whether they have been exposed to it through everyday household materials or improper industrial disposal (Betts, 2007; Nicole, 2013).

In lab rodents, PFOA has been statistically proven to have a wide range of health effects. PFOA can causes issues anywhere from tumors to neuroatypical behavior (Steenland, Fletcher, Savitz, 2010) and lab rodents exposed to PFOA while fetal exhibit lower birth weights and lengths (Apelberg, B., et al. 2007). This data is mirrored in human populations: researchers at Johns Hopkins University found that there was a strong correlation between PFOA exposure during gestation and decreased birth weight and head circumference of infants (Betts, 2007). Additionally, PFOA causes neonatal mortality in rodents, and can be transferred through breast milk in human populations, as confirmed by a Swedish study (Betts, 2007). Beyond natal development, PFOA can cause issues in organisms long after they have been exposed to it. PFOA affects the processing of fatty acids in the body, and lab rodents which have been exposed

to PFOA in utero exhibit extreme obesity as adults, long after their liver has filtered the PFOA out of their blood (Betts, 2007).

Water Contamination Throughout the Nation

Hoosick Falls is not the only city in the U.S. facing drinking water contamination and dangerous health effects. In May 2016, Flint, Michigan received national publicity as a result of the city's drinking water contamination. The lead lining of the water pipes leached into the drinking water and then into the bloodstreams of Flint residents (Hanna-Attisha et. al, 2016). The attention that Flint received resulted in hundreds of cities across the country coming forward with similar problems.

There are several different types of drinking water contamination that communities face. The first one is heavy metal contamination, like what happened in Flint. The Central Valley in California has faced similar problems with Uranium (Knickmeyer, 2016). These contaminations are normally caused by old infrastructure that ought to be replaced. This type of contamination leads to elevated levels of heavy metals in residents' bloodstreams, which may cause cardiovascular effects, reproductive problems, decreased kidney function, and even death (Learn About Lead, 2017).

Drinking water contamination can also stem from factories or manufacturing plants, where the gasoline, oil, or chemicals leach (or are dumped) into the environment (Groundwater Contamination, 2017). Oftentimes, corporations are dumping within the parameters of the Clean Water Act, so the contamination occurs legally. Erin Brockovich brought awareness to this phenomenon when she found that industries were poisoning her drinking water with hexavalent chromium. In 2010, a study found that hexavalent chromium was found in 31 out of 35 city water supplies tested, affecting over 26 million people (Sutton et. al).

A 2016 study found that poly- and perfluoroalkyl substances (PFASs), the umbrella contaminant that PFOA falls under, have been found at above-EPA-recommended levels in 66 public drinking water supplies across the United States serving six million Americans (Hu et. al, 2016). What's more, over 200 unregulated chemicals were found in drinking water sources around America in 2009 (Luntz, 2009). Drinking water contamination is pervasive in the United States in the 21st century, despite decades of clean drinking water legislation.

Clean Drinking Water Legislation

Safe Drinking Water Act:

In 1948, the American government passed the Federal Water Pollution Control Act into law, beginning our nation's journey to ensure clean water for its citizens. Then the Clean Water Act came into force in 1972, recognizing the need to regulate and control the problems caused by nonpoint source pollution, or pollution coming from an unspecified source (History of clean water act; 2016). The Safe Drinking Water Act was passed by Congress in 1974, and amended to its current version in 1996. The law authorizes the EPA to set standards for natural and manmade contaminants (Understanding the Safe Drinking Water Act, 2017). While the EPA has issued drinking water regulations for 90 contaminants, over 80,000 unregulated chemicals are available on the market (EPA, 2017; Environmental Advocates of New York, 2017). PFOA is just one of these thousands of contaminants with very few restrictions.

UCMR 3

One major limitation of drinking water legislation is a section of the Drinking Water Development Act, the UCMR 3, a provision which maintains that the EPA only has to test for unregulated contaminants in the drinking water of communities with populations greater than

10,000 people (Schmidt, 2016). Since Hoosick Falls' population is no greater than 3,500 people, the village did not regularly test its drinking water supply for PFOA.

Issue Attention Cycle

Legislation happens when traumatic events bring issues into the public arena. Here, according to leading scholar Anthony Downs, there are four stages: First is the pre-problem stage, where an “undesirable social condition exists,” but it has not been brought to mainstream attention. Second is the “alarmed discovery and public enthusiasm” stage. The discovery of Flint’s water contamination, the Sandy Hook school shooting, the Ebola epidemic are all powerful examples of this phenomenon. Politicians promise to do something about the issue while it is still on the forefront of the public consciousness. This is the stage at which Hoosick Falls exists currently. The third stage is when people realize the cost that action would require. People recognize that the problem can only be solved if those who do not face the problem make a sacrifice. In the fourth stage, public interest gradually declines until one of three reactions is reached: people feel discouraged, others feel threatened, and others become bored with the issue, or some combination of these three. The final issue is the post-problem stage, where some attempt has been made to address the issue, whether successful or unsuccessful, and the public is largely not excited about it anymore (Downs, 1972). According to this model, if Hoosick Falls residents hope to take action, it must happen now, before people and politicians lose interest and motivation.

Agenda setting

Logical thinking would tell you that legislators pass policy to solve a problem. Kingdon’s theory of agenda setting complicates this idea a bit. Kingdon theorizes that agenda setting is the

first step of the policy making process, but conditions have to be just right in order for it to take place. He outlines three separate “streams” that must converge in order to create a policy window (Figure 1). Without the convergence of these streams, it is not even possible to take the second step. Kingdon’s first stream is the logical one: problem. Here, our problem is that Hoosick Falls has high levels of PFOA in drinking water. The second stream is proposals: this encapsulates all of the different policies suggested that aim at fixing the problem. If no proposals are made, the problem will not be solved. The third stream is politics: this has to do with partisanship, changes in administrations, and pressure from outside groups (Koffman). The way that these streams come together has a huge influence on what policies are passed in response to a given problem. In Hoosick Falls, politics has largely influenced the actions taken by local, state, and federal governing bodies.

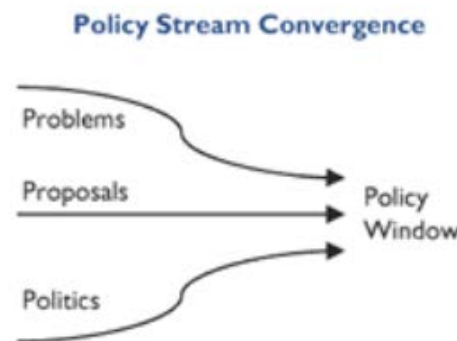


Figure 1, Policy Stream Convergence Illustration

Disaster Sociology

Disaster Sociology studies the impact of environmental disasters on communities and their effect on the community culture, in particular the solidarity and divisiveness within communities. Disaster sociologist Kai T. Erikson constructed the framework for this field with

his seminal study “Everything in Its Path” on the outcome of a 1972 mining flood in Buffalo Creek, West Virginia. Erikson chronicled the emotional trauma residents faced-- approximately 93% of the residents suffered from “an identifiable emotional disorder” (Erikson, 1976, p. 156). He also chronicled the breakdown of a once tight-knit community, where residents struggled with low morale, disorientation and disconnection. Using Erikson’s model, we will determine how the PFOA contamination in Hoosick Falls has affected the community given the contaminations’ lack of visibility and physical damage.

Methods

As stated above, water contamination in the United States is a common phenomenon. Our research will function as a case study for community response in regards to environmental disasters utilizing the frameworks of political science and disaster sociology.

In this case study, we reviewed literature on drinking water legislation, the issue attention cycle, agenda setting, and disaster sociology. Data collection was both quantitative and qualitative, and our mixed-methods approach included site visits, semi-structured interviews and a survey to gather perspective from all stakeholders, including community influentials, key policymakers, Saint-Gobain factory workers and everyday residents.

Throughout our research, we attended five village meetings that were open to the public. In the first meeting, the Mothers of Flint, Michigan joined the Mothers of Hoosick Falls to share their experiences and discuss strategies for change. We also attended meetings discussing the possibility of Volatile Organic Compounds (VOCs) in the village as well as meetings tabling the \$1.04 million settlement deal with Saint Gobain. These meetings gave us important insight into the community's perspective, and they also helped us develop a rapport in the community.

In total, we conducted 10 semi-structured interviews with community influentials, including: Mike Hickey, Whistle Blower; Loreen Hackett, Founder of PFOA Project New York; Jim Martinez, Cofounder of Healthy Hoosick Water and Michelle Baker, Community Activist. We also conducted semi-structured interviews with Rob Allen, newly elected Mayor of Hoosick Falls as well as state policymakers Judith Enck, Former Head of EPA Region 2, and Assemblyman Steven McLaughlin. On the state level, we conducted semi-structured interviews with Brad Hutton, NYS Department of Health as well as Martin Brand, Jim Morris, and Ric Mustico from NYS Department of Environmental Conservation. We also had the opportunity to speak with a representative from the Office of U.S. Senator Kirsten Gillibrand. Our requests to speak with the Office of Governor Andrew Cuomo and State Senator Kathy Marchione were declined. Dina Pokedoff, a Press Contact for Saint Gobain, also did not return our request for an interview.

We conducted a survey on Qualtrics, garnering 144 responses in total. This sample represented 4.2% of the Hoosick Falls population. We shared the survey with various social media platforms and we surveyed Hoosick Falls residents outside of the local grocery store, Tops.

Finally, we conducted archival research in two different Facebook pages dedicated to PFOA in Hoosick Falls and New York state. We went through the pages from beginning to end and not only counted the number of posts per month, but also categorized posts. The categories with the most posts per month leant insight into what Hoosick Falls residents prioritized in a certain month.

Results

Social Media Trends

In order to learn how the issue attention cycle worked in Hoosick Falls, we performed in depth archival research on two PFOA related Facebook pages. We know, from our semi-structured interviews, that the community influentials running the two pages have different visions for the future of Hoosick Falls. We know the administrator of “PFOA in Hoosick Falls” to be an advocate of personal injury lawsuits and addressing contamination on a national scale. Meanwhile, the “New York and US PFOA Page” has no administrator, but the individual responsible for the majority of the posts advocates for community revitalization and Hoosick Falls-based solutions.

The first page we looked at is called “PFOA in Hoosick Falls,” and it has 1,503 likes. We collected data from this page between December 2014, when the page was started, and April 15th 2017. There are clear peaks in the number of Facebook posts in February 2016, June 2016, and February 2017 (see figure 2).

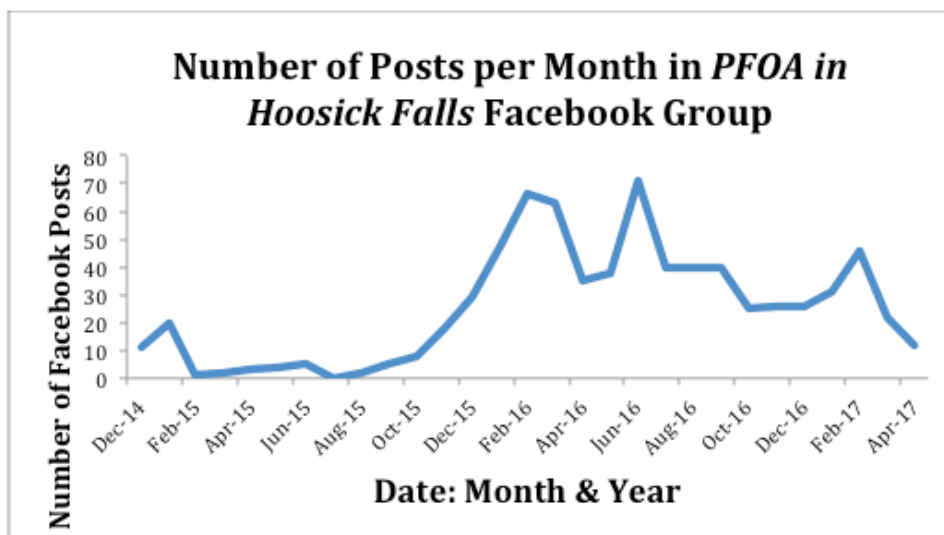
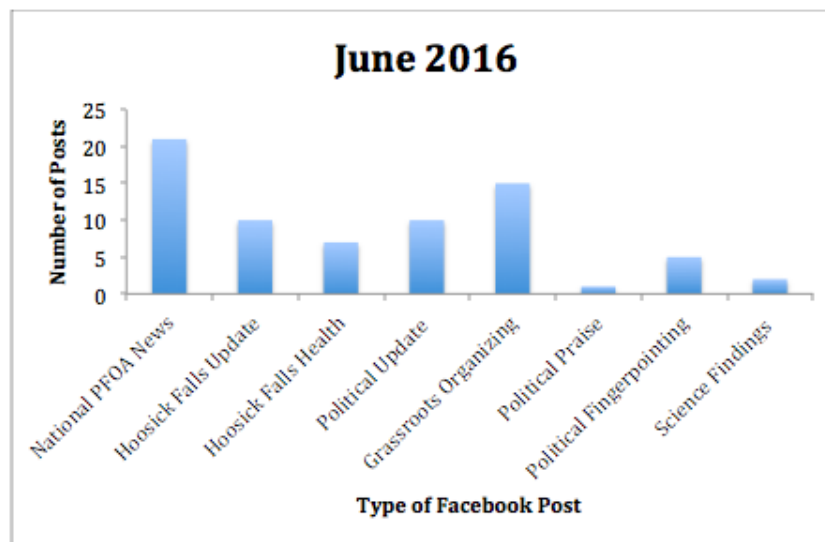
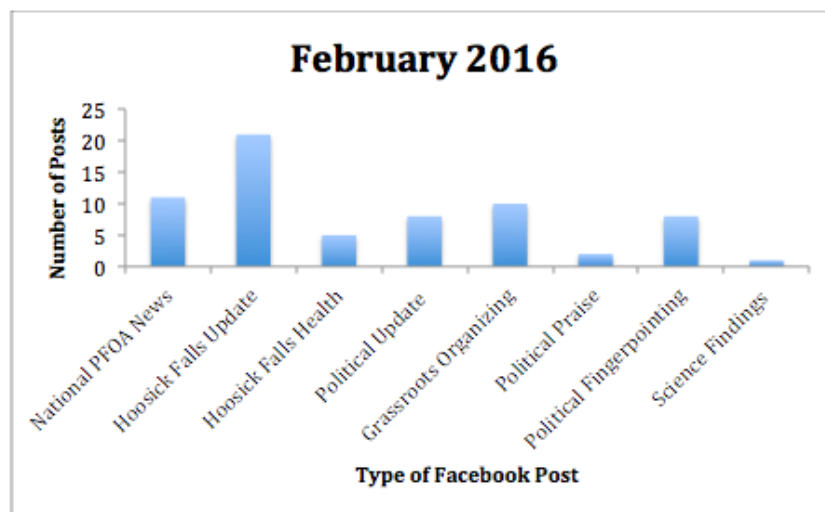


Figure 2, Facebook posts in “New York and US PFOA Page,” June 2016

This Facebook page has been active for almost three years, so its posts illustrate the trends in what certain Hoosick Falls residents deem important. But in the three months where we see spikes, the type of Facebook post varies. In February 2016 and February 2017, there is a focus on Hoosick Falls updates. In June 2016, however, the focus is on National PFOA news. While National PFOA news, Hoosick Falls Update, Political Update, and Grassroots Organizing are among the highest posting rates for each month, the trend from local, to national, back to local, is meaningful.



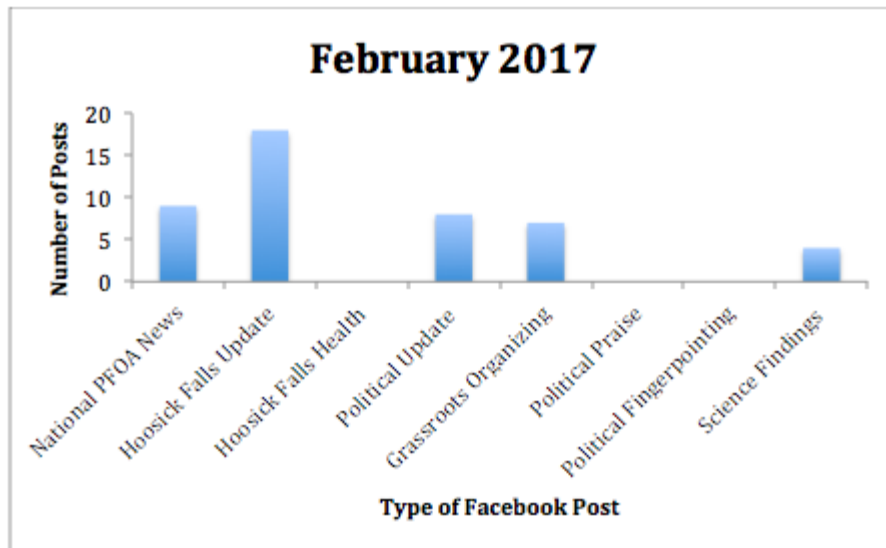


Figure 3, Facebook posts in “PFOA in Hoosick Falls,” February 2016, June 2016, and February 2017.

We also monitored the activity of another Facebook page, “New York and US PFOA.” This page was only active in June 2016, so it provides an extended look into Facebook trends over a short period of time.

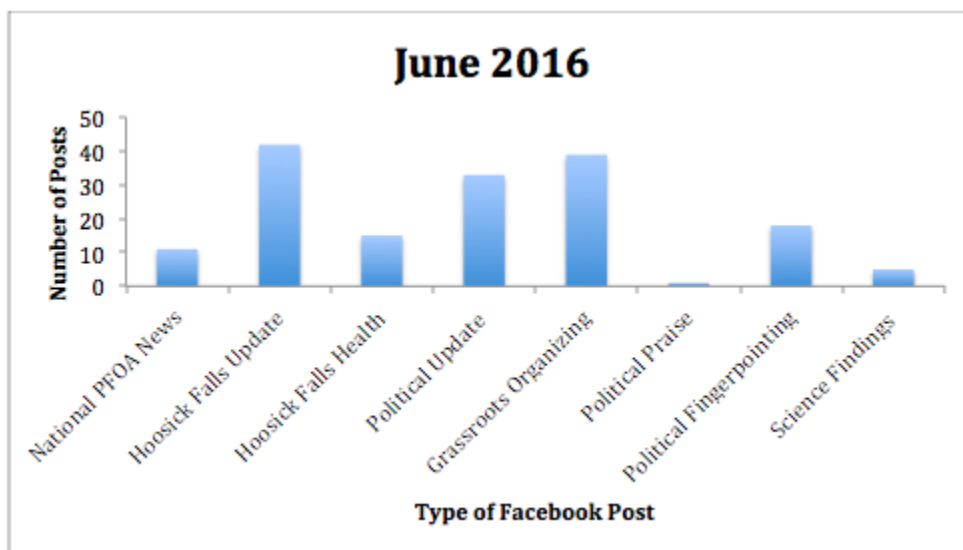


Figure 4, Facebook posts in “New York and US PFOA Page,” June 2016.

Though this Facebook page is monitored by a different community influential with different goals, there is still a clear focus on local organizing and education.

Visibility of Concern

In the survey, we asked respondents a series of questions pertaining to concern. Using objective and subjective measures, Figure 5 demonstrates how concerned the residents of Hoosick Falls are in regards to PFOA-related health problems.

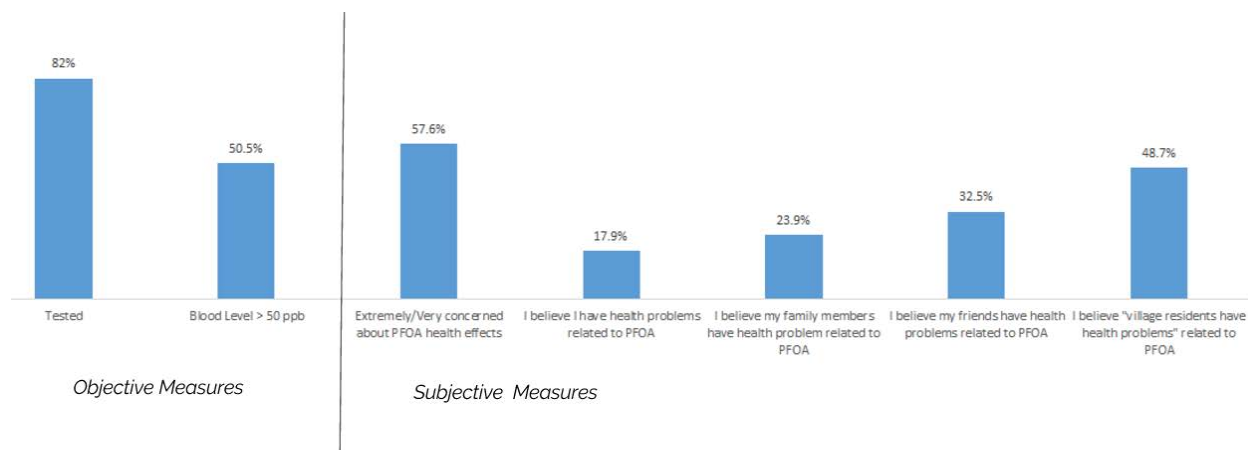


Figure 5, The “Visibility” of PFOA Contamination in Hoosick Falls

According to the survey, 82% of respondents were concerned enough about the risk of PFOA to undergo blood testing. Of the respondents who were tested, more than half had PFOA blood levels upwards of 50 ppb, which is 25 times the national average (NYS Department of Health, 2016). Subjectively, 57.6% of respondents demarcated that they were either “very” or “extremely” concerned about the health effects of PFOA. Moreover, close to 1 out of 5 respondents believed they were personally affected by health issues linked to PFOA, marking “agree” or “strongly agree” on the survey. About 1 out of 4 respondents and 1 out of 3 respondents believed their family and friends had PFOA-related health issues, respectively. Approximately half of all respondents believed that the village residents had health issues linked to PFOA as well.

Community members' perception of how PFOA has affected the health of the community has encompassed a whole host of issues:

"[...] My mom has suffered a massive stroke, you know she's been drinking the water for seventeen years. My daughter has had bone fracture issues, poor kid is fourteen years old and just had an ACL meniscus replacement...my daughter was born premature, when you start putting the puzzle together it's horrifying to look at the finished picture..."

-- Michelle Baker, Community Activist

"[...] My family is the walking poster child, from my grandkids to me, on everything that can affect you [with PFOA]...throw in some breast cancer just for sh*** and giggles and then this new one is so rare no one on the East Coast has it. No one...I'll have hip replacements. It won't be my first-- I'm the bride of frankenstein, man, and this was in my 30s. My ankle was shortly after that. My toes-- the joints have died. A couple of them are screwed on. Welcome to our world... Fix our f***** water. Do you think now any of us want to drink anything that could be in that water? Give our bodies a chance to heal for crying out loud..."

-- Loreen Hackett, Founder of PFOA Project New York

"[...] I've never met so many people, now, who have health issues who are blaming it on PFOA. I mean, everybody has health issues from PFOA. I know a gentleman who wrote a book-- it was in the *Bennington Banner* last year-- he wrote a book about doing drugs across the country, but now he's blaming all his health issues on PFOA and he's got a lawsuit. So, what I tell people is, listen, I've got no doubt-- I don't have proof-- but I'm sure people have been harmed by this...If you grew up here, you have a general feel of, it seems like a lot of people died young of cancer. People have always said, it must be something in the water, [laughs] who knew, that that could be it."

-- Jim Martinez, Cofounder of Healthy Hoosick Water

"There's been a case of cancer in every household. That information isn't out there, I don't think, I just sort of casually know about it...But, here's another thing about how the cancer registry works, it's not that good. It's really not that strong. Like, the more you look into it...there's only four cancers they track in this county...I know of three cases in the community of eye cancer. Eye cancer is a 1 in 300,000 type situation. It's super rare. And I can name three people in a tiny community. There's another one, ovarian cystic something, and I casually know of double digits of people who have it here. And, I didn't even know it existed beforehand."

-- Rob Allen, Mayor of Hoosick Falls

“Ride-or-Die” Mentality

Community loyalty is a key value in Hoosick Falls, a tight-knit and somewhat insular place. One survey question asked whether respondents would move away from Hoosick Falls if they received the financial means to do so from a personal injury lawsuit.

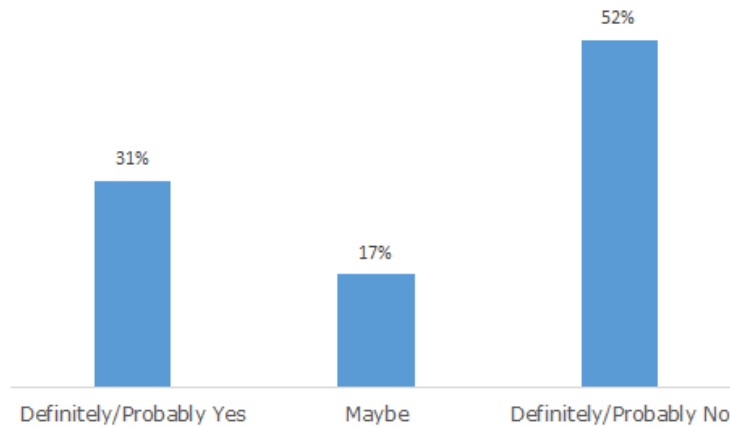


Figure 6, Survey Results, Question 8.

According to the survey, 52% of respondents would not leave Hoosick Falls even with the risk of PFOA health issues, which is significantly higher than the 31% of survey respondents that would definitely move away. However, 17% of respondents were unsure about whether they would move away from Hoosick Falls, marking “maybe” on the survey.

We also ran a Pearson Correlation test on our survey data to find out if there were significant correlations between concern for PFOA health impacts and likelihood of leaving Hoosick Falls. We expected to find higher rates of concern pertaining to PFOA health effects to be positively correlated with likelihood of leaving the village.

Correlation: PFOA Health Worry and Likelihood of Leaving Hoosick Falls			
		Very or Extremely Worried about Health Impacts of PFOA	If you received a sizeable amount of money from a personal injury lawsuit against Saint Gobain, would you move away from Hoosick Falls? - Likelihood of leaving
	Pearson Correlation	1	-.415**
	Sig. (2-tailed)		.000
	N	117	108
**. Correlation is significant at the 0.01 level (2-tailed).			

Figure 7, Survey Data,

We found a statistically significant correlation opposite of what we expected: the more worried residents were about health impacts of PFOA, the less likely they were to leave Hoosick Falls, even if they had the economic means to do so.

Accountability

From the start, a central question to our research was finding out who the residents of Hoosick Falls hold responsible for the PFOA contamination. We posed this question to community influentials and politicians, and they all had similar answers:

“[...] the way environmental law works the polluter is liable. But this is a highly unusual situation where the village mayor knew about the pollution, the state health department knew about the pollution, the county health department knew about the pollution, Saint Gobain knew about the pollution for well over a year and didn’t tell the public”

-Judith Enck, Former Head of EPA Region 2

“So I blame the polluters always, because, just, they polluted! Not maliciously, but they polluted. [...] So after the fact, you have the government saying, ‘oh outrageous!’ Well you’re the one that permitted it! They didn’t do anything illegal. So I blame them, I blame, you know to a lesser extent, the mayor. Not really, because he’s a small town mayor. The guy’s a retiree from the state, [and] this is a little village, and all the sudden he gets slammed with this stuff. He didn’t do anything malicious, he just woke up one day like ‘what the heck is this?’ [...] So, you can blame everybody. You can blame the DEC, well... the DOH, certainly I blame the DOH, because, well, the refusal to even acknowledge, the outright refusal to listen to the EPA and to try to have it both ways, to say, ‘we know better than you,’ and then blame the EPA.”

-Assemblyman Steve McLaughlin

“you know, after the polluter, obviously. With all the documents that came out later on, it would probably more—it is really hard to say—after the lower levels of government, then it got elevated up to the county and I think really on the state level is probably where it kinda just got shuffled around. Between really the county and the state level at the Department of Health that’s really where I think the ball was dropped.”

-Michael Hickey, Whistle Blower

It’s clear that the blame is widespread, and although Saint Gobain is legally liable, many institutions and individuals shoulder the blame.

In our survey, we asked residents of Hoosick Falls to evaluate the effectiveness of how several institutions have addressed PFOA contamination. Each institution we asked about has

been deeply involved in tackling the contamination crisis. Figure 8 displays the data we collected.

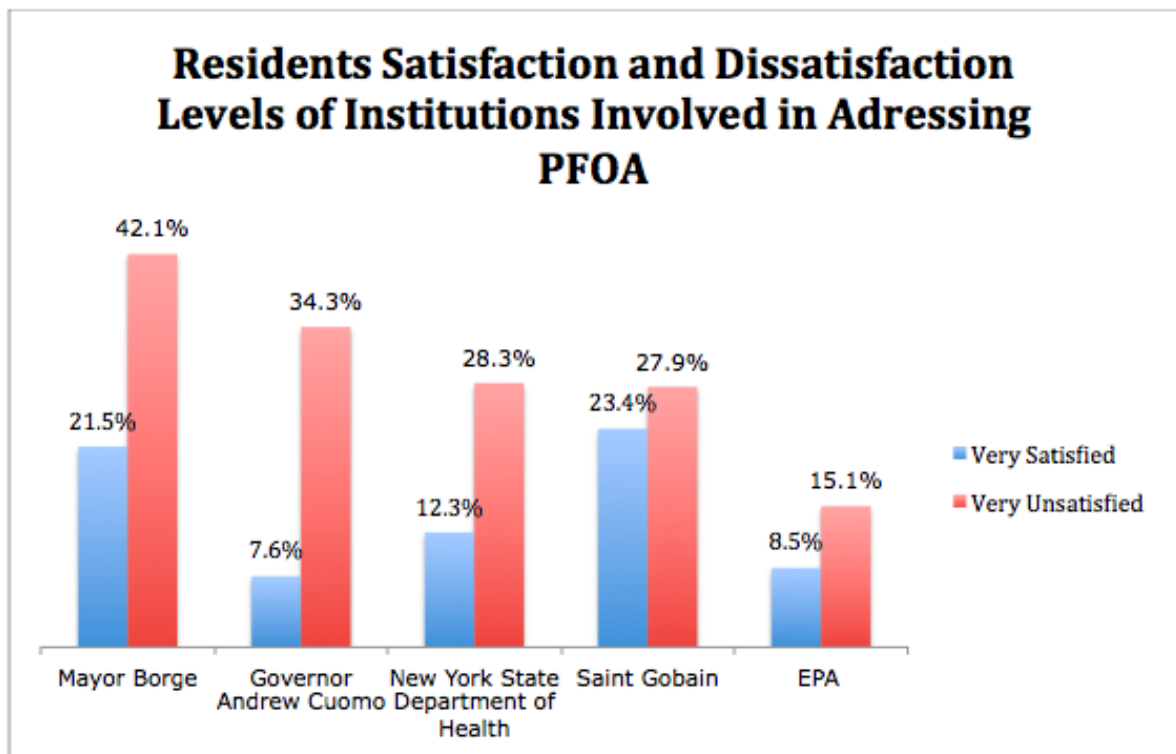


Figure 8, Survey Data, Question 9.

Former Hoosick Falls Mayor David Borge and New York Governor Andrew Cuomo have the highest levels of dissatisfaction while Saint Gobain has the highest level of satisfaction when ranked among its peer institutions.

Policy Options

In our survey, we presented the citizens of Hoosick Falls with 10 different policy options aimed at improving the water contamination situation. Each of the options has been suggested by community influentials, local policymakers, or state policymakers. We asked respondents to rank how much they agreed with each policy suggestion, using a Likert scale, and the data below reflects the percentage of respondents that either agreed, or strongly agreed with each suggestion:

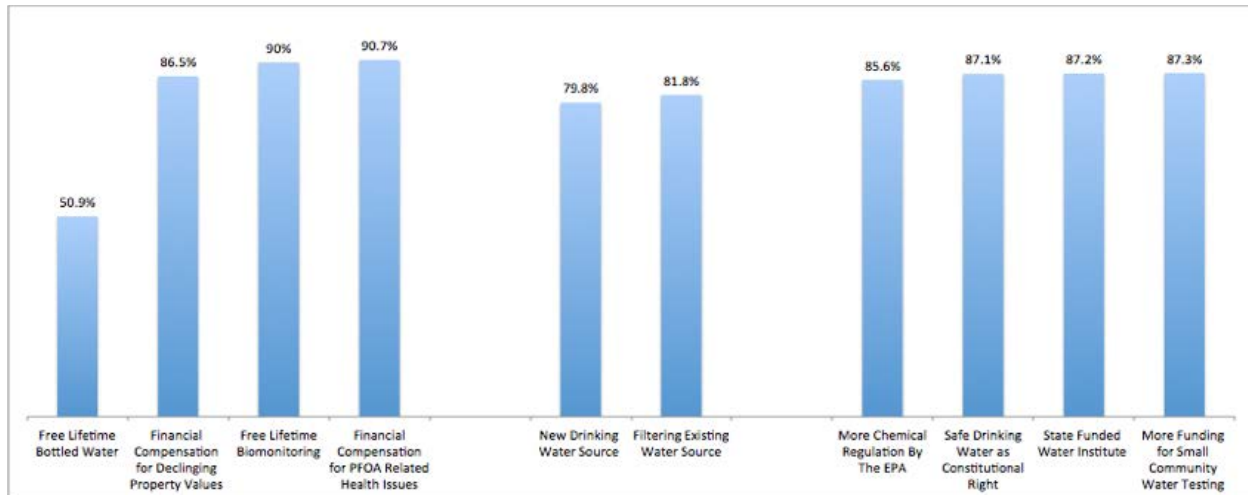


Figure 9, Survey Data, Question 10.

Across the board we see an overwhelming amount of support for every option, except “Free Lifetime Bottled Water,” which merits its own analysis later on. These policies were divided into solutions aimed at the individual (free lifetime bottled water, financial compensation for declining property values, free lifetime biomonitoring, financial compensation for PFOA related health issues), aimed at the community (new drinking water source, filtering existing water source), and aimed at state or federal changes (more chemical regulation by the EPA, safe drinking water as a constitutional right, state funded Water Institute, and more funding for small community water testing).

We ran a Pearson Correlation test between concern about the health effects of PFOA and support of public policy changes (Figure 11), and found some surprising results.

[illegible]

Figure 10, Pearson Correlation Test

Concern level is positively correlated with desire for free lifetime bottled water, financial compensation to Hoosick Falls residents for declining property value, financial compensation for PFOA related health problems, and a new drinking water source for Hoosick Falls. This means that the more concerned residents are about PFOA related health problems, the more likely they are to support these policies. Resident support for filtering the existing Hoosick Falls water source is, however, negatively correlated with concern level. This means that the more concerned residents are, the less likely they are to support filtering the existing water source.

Discussion:

Social Media Trends

The trends in post type on the “PFOA in Hoosick Falls” page demonstrate that some residents of Hoosick Falls have found different topics to be important over the course of the two and a half years that PFOA in Hoosick Falls has been a known problem.

The trends are a result of what was happening on the state and local level in the indicated month. There was an abundance of “Hoosick Falls Updates” in February 2016, because that is when the GAC filtration systems became operational, the FOILED emails became public, and when Weintz and Luxenberg filed a lawsuit against Honeywell and Saint Gobain. There is a national focus in June 2016, because the State Senate passed a bill in that month that extended the statute of limitations for three years past the designation of a superfund site, giving Hoosick Falls (and other similar towns and villages) a chance to sue polluters for their injuries. February of 2017 focused back in on Hoosick Falls because the proposed settlement was up for a vote by the Village Board.

It is meaningful that there are congruences between the “PFOA in Hoosick Falls” page and “New York and US PFOA Page,” because it illustrates that, despite the wide array of mindsets in Hoosick Falls, the residents are on the same page about some things.

Visibility of Concern

In the community, residents grapple with their perceptions of how PFOA has affected the health of village residents in different ways. As Michael Hickey mentioned in an interview, “there is never going to be a magic [PFOA blood level] number that is going to tell you that you’re going to get sick.” In other words, it’s unclear at what threshold PFOA goes from innocuous to life-threatening. This phenomenon is emphasized by the evidence that PFOA is likely not the only contaminant Hoosick Falls residents are dealing with. During the eight month period of our study in the village, it was discovered that Volatile Organic Compounds (VOCs) were potentially in the air as a result of the activity from Honeywell’s old manufacturing plant. In a village built on manufacturing by multiple industries, this may be, as Hackett calls it, the “tip of the iceberg.”

The perception of PFOA-related health issues in Hoosick Falls has manifested in several ways. Many people blame most, if not all, of their health problems on PFOA (Martinez, 2017). Others believe they have health issues related to PFOA but also acknowledge there is no way to separate the effects of PFOA from their lifestyle choices that may have contributed to the health issues they are now facing. Herein lies an irreconcilable conundrum. With no way to delineate lifestyle choices from the effects of PFOA, the way in which individuals determine their concern is impacted. However, lifestyle choices certainly cannot account for all the health problems in Hoosick Falls. In an interview with Loreen Hackett, Hoosick Falls resident, we learned that

despite a lifetime of smoking, her lungs are the least diseased part of her body: “Out of my whole body, my lungs are the only godd*** thing that are fine. How sad it that? This other s***is going to get me long before smoking does” (Hackett, 2017). So while it is impossible to discern what health problems are a result of PFOA and what are a result of lifestyle choices, it is clear that lifestyle choices are not accountable for every health problem in Hoosick Falls.

“Ride-or-Die” Mentality

In January 2016, Erin Brockovich, a well-known environmental activist working against water contamination, visited Hoosick Falls on behalf of the Wietz & Lutzenberg law firm, which specializes in personal injury law (Hamilton, 2016). To outsiders, it may have seemed that Hoosick Falls was finally on its path to restoration. This proposal, however, was met with community resistance. Residents who supported this option were viewed as prioritizing their own individual needs over the good of the community, which goes against the tight-knit and collective mentality of Hoosick Falls residents. Since Saint Gobain is vital to the economy of Hoosick Falls, suing Saint-Gobain was perceived as shirking community values. As a result, more than half of survey respondents said they would not move, close to twice the amount of people that said they would. Even with a “suspected carcinogen” in the groundwater, in the soil, and maybe even the air, community loyalty to Hoosick Falls is stronger than the fear of being poisoned from PFOA.

Additionally, the negative correlation we found between worry about PFOA related health effects and likelihood of leaving Hoosick Falls was surprising. It’s possible that this finding reflects the earlier finding, that residents’ loyalty to their hometown trumps their anxiety about PFOA. It’s also possible that Hoosick Falls residents who are more worried about PFOA

health effects have conceded that it's too late, they've already been subjected to contamination and leaving the village wouldn't change anything.

Accountability

The fact that Saint Gobain has the highest level of satisfaction is surprising, especially considering the fact that they are solely responsible for allowing PFOA into the Hoosick Falls drinking water system. This statistic represents the mentality a many Hoosick Falls residents have; that Saint Gobain is doing all they can do address PFOA contamination. They are following federal CIRCLA legislation, paying for bottled water for residents, and installing POET and GAC filtration systems on the municipal drinking water and private water systems. Saint Gobain is following the system of accountability that has been set up for them as polluters.

Mayor Borge and Governor Cuomo, however, are elected officials who are meant to serve the needs of their constituents, something that they arguably have not done. Mayor Borge actively supported a proposed settlement of \$1.04 million, which would cover the cost of the lawyers and the PR firm hired by Saint Gobain on behalf of Hoosick Falls and not much else. The terms of the settlement would require the village of Hoosick Falls to forfeit their rights to sue Saint Gobain for any further or future damages. Governor Cuomo largely ignored the PFOA contamination, and he angered residents the only time he visited Hoosick Falls by making rude comments about the water filters, according to residents. Additionally, both of these officials were in office during the discovery of the contamination, and didn't alert village residents to the fact that they were drinking contaminated water for almost two years. This resulted in a breach of trust, which is represented in the current high levels of dissatisfaction.

Public Policy

In terms of feasibility, Governor Cuomo has called for a water quality response team, comparable to the “State Funded Water Institute,” but no other policies have been formally proposed otherwise. Additionally, there has been minimal suggestion of where the money would come from to fund these different policy initiatives. Some survey respondents voiced the concern that the funding for these changes would become the burden of the New York taxpayer, and others were concerned that there would be minimal federal funding for these projects under the Trump administration. Other people we spoke to were more hopeful. When asked about the potential funding from the government for an entirely new water source, assemblyman Steve McLaughlin cited Trump’s pro-infrastructure stance, “I love the fact that we’re talking about infrastructure, that’s exactly what the President should be talking about... If we’re gonna spend trillions anyway, I’d rather spend trillions on salaries and benefits and rebuilding infrastructure and concrete pipe and steel...” This outlook—the combined goals of solving environmental problems while improving local infrastructure and putting citizens to work, would work well in the favor of Hoosick Falls.

Our Pearson Correlation data shows that residents who are more concerned about the health impacts of PFOA are more likely to support free bottled water for life, financial compensation to Hoosick Falls residents for declining property value, financial compensation for PFOA related health problems, and a new drinking water source for Hoosick Falls. This depicts the mentality that residents feel towards state and local politics. The residents of Hoosick Falls believe that they’ve been wronged on a large scale, and that they deserve multiple types of reparations. Of course, this has merit considering they were drinking contaminated water for two years. Meanwhile, the negative correlation between concern level and support for filtering the

existing water source speaks to a deep stigma that Hoosick Falls residents feel regarding their water, which is further illustrated by the approval levels for free lifetime bottled water.

Free lifetime bottled water only received a high approval rating from 50% of respondents, a seemingly low number when compared to ratings of 90% approval, but when the fact that the municipal water supply is currently filtering at non-detect, this percentage is astounding. 50% of respondents would rather drinking bottled water for the rest of their lives, than drink their tap water that is now filtering at non-detect PFOA levels. This speaks to a deep distrust of the health and safety of the water by the community. Citizens would not ask for bottled water if they felt that the municipal supply was safe, as the hassle of getting in your car, picking up bottled water, and lugging it home is a nuisance compared to just turning on the faucet. When water comes out of your tap every day, getting it from anywhere else becomes an unexpected chore. Community influentials have called into question the presence of C7 or C6 in the water supply, common chemical substitutes for PFOA (C8). The current GAC filter does not target anything less than C8, and the concern is that although PFOA is filtering at non detect, other chemical may be making their way through the system, undetected and unfiltered.

Where Are We Now?

Since the news of the contamination crisis broke, a number of changes have been made at the local, state, and federal levels. In March of 2017, Hoosick Falls elected a new Mayor, Rob Allen, an outspoken critic of the settlement who campaigned on a platform of transparency (WAMC Northeast Public Radio). On the state level, Governor Cuomo has announced that \$2 billion will be allocated to clean water infrastructure and water quality insurance over the next

four years (New York State) and has called for a “Water Quality Response Team” (Hamilton) to prevent communities like Hoosick Falls from facing these problems in the future.

On the federal front, no official policy changes have been announced, but when we spoke with Rik Mustico from the New York Department of Environmental Conservation, he mentioned that federal groups are trying to amend the flawed UCMR 3 legislation: “I’m also not sure as far as what EPA is doing, I believe that folks potentially are doing some additional work on changing municipalities that have less than 10,000 folks” (Mustico). Finally, New York Senator Kirsten Gillibrand has introduced legislation amending the Water Resources Development Act to require the EPA to “test for all potential contaminants in all public water supplies” (Kirsten Gillibrand). These changes to federal policy would be proactive steps to keeping water contamination crises from happening.

Hoosick Falls faces the crisis that they do because, as a small village battling an unregulated contaminant, there was little to no proactive legislation in place to protect the village. All actions had to be taken at a reactive pace, and a slow one at that. If we see one positive outcome to Hoosick Falls’ dire situation, it is that proactive policies are being discussed at the state and federal levels. Furthermore, environmental disasters in general could be avoided by utilizing the precautionary principle to ensure that environmental threats will not pose risk to humans or the environment in the future.

Suggestions for Future Studies:

The environmental crisis in Hoosick Falls lends itself to many disciplines of study. We specifically did our research through the lense of political science and disaster sociology, but Hoosick Falls has a myriad of possibilities for future study. Capstone groups in coming years

may want to look into more specific policies that shaped the crisis, science of PFOA's effect on the human body, or a full ethnography of the community. The following are more fleshed out ideas for future studies.

North Bennington, VT has faced a similar problem with PFOA contamination, at the hands of Saint Gobain, but process has been handled completely differently. It would benefit various stakeholders, both the village board of Hoosick Falls, and New York state agencies such as the Department of Health to examine how and why different politics and policies allowed for a different outcomes in this very similar situation. What are the differences in how state legislators and agencies have responded, and what political philosophies informed them? If Vermont has more effective policies on how to respond to environmental contamination, perhaps New York stands to learn something.

Another topic that would be useful to study in the future is the economic situation in Hoosick Falls. There is a common consensus in the village that if Saint Gobain leaves, Hoosick Falls won't be able to economically recover from such a loss. The economic structure of Hoosick Falls is reminiscent of company towns, where the entire population is dependant on a corporation, and they therefore feel like they owe that company their loyalty. The residents and government of Hoosick Falls would benefit from an economic study of financial viability of Hoosick Falls without Saint Gobain. Can the village survive without their polluter?

One of the findings that stuck with us was the overwhelming support for any and all clean water policy, even policy as unlikely as making clean water access a Constitutional right. We would like to attribute this to citizens simply believing that clean water should be a right and not a luxury, and that everyone wants this relatively equally, whether or not they have high levels of PFOA in their blood. Our study is limited because we only have data on the public opinion of

people who are already dealing with contaminated water. To better understand these numbers it might help to have a further study on the opinions of people who have access to clean water, to see if there is equal demand across populations using a non contaminated population as a control group.

Are there countries who are doing this right? The United States is seeing an explosion of contamination crisis as a result of, arguably, failing policy on how to regulate contaminants. How do other, older countries regulate chemicals? Do they see fewer contamination crises as a result of more precautionary legislation? On the other side of the spectrum, how will industrializing countries, like China and India, legislate these same issues? Is there a chance for them to utilize precautionary legislation to keep their residents from the trials and tribulations that Hoosick Falls residents are living through now?

Conclusion:

“The Rust Belt, as they say, is rusting out.”

-- Assemblyman Steve Maclaughlin

Our research on Hoosick Falls began as a review of everything we could learn about the current crisis, and why PFOA is a concern to health and the environment, and through this investigation we began to meet community influentials who pointed us in further directions. We shook hands and took business cards, and spoke to community members in front of their grocery store, on their couches, and in their offices at work. We spoke with politicians, representatives, and employees of the state, looking for patterns in the answers to our 3 main questions: How has the community responded? Who do they blame? What do they want moving forwards? We took

our forming ideas and wrote a survey based on the direction we saw our study moving, in hopes of gathering the opinions of the greater Hoosick Falls community. Our study has shown us that there is no simple solution, no clear way forward, and no matter what direction Hoosick Falls takes, it will forever bear the stigma of being a federal Superfund site.

Currently, standards of production are changing, but the environmental contaminants that are working their way into municipal water supplies have already been in the ground for decades. The infrastructure is already in place, and even if the contaminants are discovered, there is no certainty that they can be remediated. Arguably, the most tragic element of the situation in Hoosick Falls is that PFOA will continue to exist in the groundwater for an indefinite amount of time, as it “does not hydrolyse, photolyse or biodegrade under environmental conditions” (EPA, 2017). While it is possible to filter the municipal water supply, the PFOA in the groundwater will likely challenge many generations to come.

PFOA is only one of many manufacturing chemicals historically used in this village. This winter, news broke that levels of VOCs exceed New York State standards during a further investigation of the extent of the PFOA contamination (Honeywell 2017). As state agencies track current contaminants such as PFOA and VOCs, it is easy to speculate that many more will come to the surface, given the history of factories in the village. It is a common belief that PFOA is just the beginning of a very long struggle, and more contaminants may be unearthed as time goes on.

Nothing can be done to remediate the PFOA in the groundwater beneath Hoosick Falls, and given that, we finally found ourselves asking, how does Hoosick Falls move forward from here? Activist Michelle Baker has criticised those residents of Hoosick Falls who want to move forward with their lives as “wanting to sweep it under the rug [...] and act like nothing is

wrong.” The idea that there is a fatalist mentality growing in Hoosick Falls is not incorrect. Certainly dealing with this environmental crisis is exhausting, and as it becomes part of the milieu of daily life in Hoosick Falls-- residents may very well push it in the backs of their minds. When we spoke with survey respondents outside of the local grocery store, some mentioned that they were tired of hearing about their village on the news, and that continuing to talk about it only brings more trouble for the Hoosick Falls community.

This mentality aside, other residents, who are equally loyal to the village of Hoosick Falls, are working hard with the resources they have. While it is impossible to go back in time and change the conditions that contributed to the extent of the crisis, they are able to work with their state representatives, elected officials, and state agents to find solutions that work best for the time being. Hoosick Falls residents have begun to develop personal relationships with their representatives, a matter that both representatives and residents boast about. When we spoke with Martin Brand from the Department of Environmental Conservation, he told us that “many members of the community know our staff on a first name basis, and I hope they know we’re in it for the long haul.” Given the multiscalar neglect that has hindered Hoosick Falls throughout its history-- whether that is the neglect of sustainable practices by aging factories or neglect from elected officials --the mention that these agencies are in it for the “long haul” is critical.

When we began our study of Hoosick Falls, we hypothesized that there would be an obvious villain-- a single state agency who had failed to do their job, or an egregious loophole in legislation, which allowed the water contamination in Hoosick Falls to slip through the cracks. In turn, because we thought it would be possible to assign blame in such a complex situation, we also thought there would be a clear solution. The more we researched, the further we saw the

web of accountability spread, and we quickly learned that no single action could undo the damage that had already occurred in Hoosick Falls.

There is a price to pay for the convenience of modern life-- American industry has left the Northeast riddled with environmental contamination. The waste left over from manufacturing is often toxic, and far too often it has been improperly disposed of. This negligence stems from a variety of factors-- relaxed regulation on behalf of the state and federal government, the prioritization of profit over human health, and a general lack of environmental ethic. Although seemingly impossible, the only way to avoid future Hoosick Falls' may be to cut out toxic chemicals from our methods of production.

Appendix A: Survey

			d	Very concerned	Extremely concerned
Concern level:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

-
- ☐ Yes
 - ☐ No

What is your PFOA blood level?

- ☐ 0-20 ppb
- ☐ 21-50 ppb
- ☐ 51-80 ppb
- ☐ 81-100 ppb
- ☐ 100 or above
- ☐ Don't know
- ☐ Prefer not to answer

Some people believe that PFOA in the drinking water may have negative health implications. Please check all that apply. I believe:

- ☐ I have health problems that are PFOA related
- ☐ I have family with health problems that are PFOA related
- ☐ I have friends with health problems that are PFOA related
- ☐ Residents of the village have health problems that are PFOA related

Do you know anyone who works at Saint Gobain? Check all that apply:

- ☐ I work at Saint Gobain
- ☐ Someone in my family works at Saint Gobain
- ☐ A friend of mine works at Saint Gobain
- ☐ Multiple family members or friends of mine work at Saint Gobain

☐ I don't know anyone who works at Saint Gobain

Saint Gobain and the Hoosick Falls local government negotiated a \$1.04 million settlement to cover the village's costs incurred since 2014 due to water contamination. Do you support the proposed settlement?

	Strongly support	Moderately support	Neutral	Moderately oppose	Strongly oppose
Level of support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How would you evaluate the effectiveness of the following agencies and individuals in addressing the PFOA contamination?

	Very satisfied	Somewhat satisfied	Neutral	Somewhat dissatisfied	Very dissatisfied
Saint Gobain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental Protection Agency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NY State Department of Health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mayor Borge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
State Senator Marchione	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Governor Andrew Cuomo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assemblyman Steve McLaughlin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other, please specify <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you received a sizeable amount of money from a personal injury lawsuit against Saint Gobain, would you move away from Hoosick Falls?

	Definitely yes	Probably yes	Maybe	Probably no	Definitely no
Likelihood of leaving	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Below are a series of policies that have been suggested. Please indicate how much you agree or disagree with each.

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
Free lifetime bottled water for Hoosick Falls residents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Free lifetime biomonitoring for Hoosick Falls residents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial compensation to Hoosick Falls residents for declining property value	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial compensation for PFOA related health problems for Hoosick Falls residents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Filtering of existing Hoosick Falls drinking water source	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
New drinking water source for Hoosick	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Falls

State funded Water
Institute to prevent
and address water
contamination issues
in NY state

☐☐☐☐☐

More funding for
water testing in small
communities

☐☐☐☐☐

Regulation of more
chemicals by US EPA

☐☐☐☐☐

Safe drinking water as
a constitutional right

☐☐☐☐☐

Other, please specify

☐☐☐☐☐

Where do you get your drinking water? Check all that apply

☐ Municipal source

☐ Private well

☐ Water bottles

What is your age?

What is your gender?

☐ Male

☐ Female

☐ Other

Do you identify as:

☐ Conservative

☐ Independent

☐ Liberal

[Report Abuse](#)

Powered by Qualtrics

Appendix B: Interview Questions

Office of Senator Gillibrand Questions

1. Michael Hickey and Loreen Hackett, two Hoosick Falls community influentials we've interviewed, stated Senator Gillibrand has plans to write federal legislation for compensation for the HF community that would be similar to the 9/11 first responders bill in terms of biomonitoring and other health provision resources. Can you speak to the timeline for this legislation?
2. During the Senate confirmation hearing for Scott Pruitt as head of the EPA, Senator Gillibrand asked if he was committed to putting PFOA as "number 1" on his list of unregulated chemicals that need to be tested and later, that PFOA needs to be banned. Senator Gillibrand also voted against his confirmation. Has Administrator Pruitt been receptive to working with Senator Gillibrand on this issue?
3. How do you think Scott Pruitt's confirmation to the EPA and the new administration's environmental platform in general will affect environmental legislation in the coming years, especially as Senator Gillibrand is a member of the Committee for the Environment and Public Works?
4. Senator Gillibrand's September 8th press release states that the Senator introduced an amendment to the WRDA that would require EPA to expand water testing for unregulated drinking water contaminants to all public water supplies, not just for populations of 10,000 or greater. There is no public record of this amendment on *congress.gov*. Could you speak about the status of this amendment?
5. One of the many things that contributed to the crisis level escalation of the water contamination case in HF was the lack of communication between Hoosick Falls local government, the DOH, and the DEC. What is Gillibrand's position on the effectiveness of state agencies in terms of efficient response to a crisis? Who does she hold accountable for the PFOA crisis?
6. Hoosick Falls activists have claimed that New York needs a "Water Institute" to oversee the DOH on water contamination issues. New Jersey established such an institute in 1984 as an amendment to the New Jersey Safe Drinking Water Act. We believe that this is not only a state by state issue, but a federal one. Would Senator Gillibrand consider introducing legislation to propose a national Water Institute?

Questions for Department of Health

1. How long do you think PFOA contamination will persist as a public health problem in Hoosick falls?
2. What has DEC done to ensure that the residents of Hoosick Falls are informed about PFOA contamination?
3. Who you perceive as responsible for fixing the water contamination?
4. How confident are you that the water filters will take out C-8? What about C-7 and below?
5. How often will the filters be changed? Is there a plan in place which guarantees the timely replacement of filters?
6. How did the size and location of Hoosick Falls affect the response to the problem?
7. Has there been any action taken to ensure more expedient communication in between state offices to prevent a similar delay of action as we saw between the DOH and the DEC with the case of Hoosick Falls?
8. In the State Senate hearings, Dr. Howard Freed, a former director of the Center for Environmental Health, stated many state agencies, for example the DOH, “always downplay the risk” of industrial contaminants and the agencies are resistant towards creating change. Please respond to his remarks.
9. Is there any information that we didn’t ask about that you think is pertinent to our work, as we investigate the social and political implications of water contamination?

Questions for Brad Hutton, DOH Deputy Commissioner for Public Health, Martin Brand of the Department of DEC Deputy Commissioner for the Division of Remediation and Materials Management

1. So far the DOH has conducted water and soil sampling, coordinated the distribution of bottled water with St. Gobain, and initiated a confidential PFOA monitoring program at Mt. Sinai. Can you elaborate on these actions? What actions will your department take in the future?
2. How well informed do you think the residents of Hoosick Falls are about the risks of PFOA contamination? What has your department done to ensure community education?
3. What is the biggest challenge that the residents of Hoosick Falls face?

4. What group do you perceive as responsible for the current state that the Hoosick Falls contamination is in? Who, or what organization, do you feel the citizens of Hoosick Falls hold responsible?
5. How confident are you that the problem can be solved?
6. How does the size and location of Hoosick Falls affect the response to the problem?
7. How do you plan to close the communication gap that exists between the state agencies, as exhibited by the ineffective relay of information between various agencies and the town?
8. Has the DOH changed any procedural responses to environmental contamination in light of how the Hoosick Falls crisis was handled?

Questions for Dina Pokedoff, Press Contact at Saint Gobain

1. Saint-Gobain's Corporate Social Responsibility (CSR) Principles of Conduct and Action states that the company is committed to limiting their environmental impact. Could you speak about the policies that limited environmental impact when the McCaffrey Street plant was in operation? Are there any new company-wide policies proposed as a result of the Hoosick Falls PFOA water contamination?
2. How many outstanding industry-related chemical contamination cases, like that of Hoosick Falls, is Saint-Gobain currently handling or remediating?
3. What percentage of Saint-Gobains annual budget is dedicated to the retroactive cleanup of contamination sites? Is there research and development funding allocated to preventing issues like this in the future?
4. How many Saint-Gobain employees work solely on cleanup issues?
5. If Hoosick Falls residents wanted to leave the area, would Saint-Gobain be willing to compensate residents financially for the lowered price of their homes due to the PFOA water contamination that resulted in a Superfund listing (causing their property values to decrease significantly)?
6. How many personal injury lawsuits has Saint-Gobain received from Hoosick Falls residents?
7. If the Hoosick Falls Village Board decides to reject Saint-Gobain's settlement offer, what are Saint-Gobain's next steps in regards to compensation for Hoosick Falls?

8. How does Saint-Gobain define its own responsibility for the environmental and human health implications of PFOA contamination?
9. Is Saint-Gobain liable for the damages caused by PFOA in Hoosick Falls?

Questions for Assemblyman Steve McLoughlin

1. Laureen Hackett and Michael Hickey have proposed legislation as a potential solution to the crisis in HF. What is the current status of the legislation they have suggested? It is very uncommon for civilians to write legislation-- what has it been like working with the people of Hoosick Falls?
2. As a republican, some might say that you've crossed party lines with your involvement in Hoosick Falls. Have you felt any pushback from your party as a result of this involvement? Is environmental regulation a bipartisan issue?
3. Compared to State Senator Marchione, you have been more involved in the proceedings in Hoosick Falls. Can you speak to your responsibilities as an assemblyman-- do you feel like your involvement in the Hoosick case is standard requirements, or has it become a larger investment of your time?
4. As a member of the committee on Economic Development, Job Creation, Commerce and Industry, how would you go about solving Hoosick Fall's economic issues?
5. Mayor Borge has cited economic concerns as his primary motivation for taking the settlement-- do you think that there are other motivations besides the debt of the village which may be affecting his stance?
6. During the last settlement meeting, Deputy Mayor DiDonoto called on the state and federal government to allocate funds, so the Village did not have to take the meager settlement deal. You spoke out against the settlement during the same meeting. In the next NYS budget, do you foresee that there will be funds allocated directly to Hoosick Falls for financial relief?
7. As a state employee, who do you hold accountable for this gaff of a water contamination crisis?

Questions for Hoosick Falls Community Influentials (Loreen Hackett, Michael Hickey, Rob Allen, Jim Martinez, Michelle Baker)

1. Who do you hold most responsible for the contamination?
2. If you could have anything to make things easier for you, what would you want?
3. If you had enough money not to worry about financials, would you leave Hoosick Falls?

4. How do you think the size and location of Hoosick Falls has affected the way state government has dealt with the contamination?
5. Has there been any sort of community impact, either positive or negative, in response to the contamination?
6. Where do you see Hoosick Falls in ten years?
7. Did you vote? Will you in the future? Who did you vote for?
8. Who else should we talk to?
9. Is there anything that we didn't ask you that you think would be helpful for us to know moving forward?

References:

- Apelberg, B., Witter, F., Herbstman, J., Calafat, A., Halden, R., Needham L., and Goldman, L. (2007). Cord serum concentrations of perfluorooctane sulfonate (PFOS) and perfluorooctanoate (PFOA) in relation to weight and size at birth; *Environmental Health Perspectives*, Vol. 115(No. 11), 1676. Retrieved from http://www.jstor.org/stable/4626991?seq=1#page_scan_tab_contents
- Betts, K. (2007). PERFLUOROALKYL ACIDS: What is the evidence telling us?; *Environmental Health Perspectives*, 115(5), A250–A256. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1867999/>
- Coffman, J. (2007). Evaluation based on theories of the policy process. *The Evaluation Exchange*, XIII(1&2)
- Downs, A. (1972). Up and down with ecology: The "issue attention cycle. *Public Interest*, (28), 38-50. Retrieved from <http://lib2.skidmore.edu:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ahl&AN=45860309&site=eds-live&scope=site>
- Environmental Advocates of New York. (2017). Drinking water quality institute. Retrieved from <http://www.eany.org/our-work/policy/drinking-water-quality-institute>
- EPA. Learn about lead. Retrieved from <https://www.epa.gov/lead/learn-about-lead#effects>
- EPA. (2017). Hoosick Falls Water Contamination. Retrieved from <https://www.epa.gov/ny/hoosick-falls-water-contamination>
- EPA. (2017). How EPA regulates drinking water contaminants. Retrieved from <https://www.epa.gov/dwregdev/how-epa-regulates-drinking-water-contaminants>
- EPA. (2017). Understanding the safe drinking water act. Retrieved from <https://www.epa.gov/sites/production/files/2015-04/documents/epa816f04030.pdf>
- Filkins, C. (2007). "Walter A. Wood mowing & reaping machine company (1865-1824). Hoosick Township Historical Society. Retrieved from <http://www.hoosickhistory.com/shortstories/WalterWoodPlant.htm>.
- Governor cuomo presents the 17th proposal of 2017 state of the state: Invest \$2 billion in clean water infrastructure and water quality protection. (2017). Retrieved from <https://www.governor.ny.gov/news/governor-cuomo-presents-17th-proposal-2017-state-state-invest-2-billion-clean-water>

Groundwater contamination. (2017). Retrieved from www.groundwater.org/get-informed/groundwater/contamination.html

Hamilton, M. (2016). Cuomo calls for water quality response team. Times Union. Retrieved from <http://www.timesunion.com/local/article/Cuomo-calls-for-water-quality-response-team-6840901.php>.

Hanna-Attisha, M., LaChance, J., Casey Sadler, R., & Champney Schnepf, A. (2016). Elevated Blood Lead Levels in Children Associated With the Flint Drinking Water Crisis: A Spatial Analysis of Risk and Public Health Response. *American Journal Of Public Health*, 106(2), 283-290.

Hayes, E. B., Matte, T. D., O'Brien, T. R., McKinley, T. W., Logsdon, G. S., Rose, J. B., . . . Juranek, D. D. (1989). Large community outbreak of cryptosporidiosis due to contamination of a filtered public water supply. *N Engl J Med*, 320(21), 1372-1376.
doi:10.1056/NEJM198905253202103

Honeywell. (2017). Honeywell Hoosick Falls VOC letter. Retrieved from <http://www.villageofhoosickfalls.com/Water/Documents/Honeywell-Hoosick-Falls-VOC-Letter-02072017.pdf>

Hoosick History. (2017). Lovejoy Chaplet Corporation. Retrieved from http://www.hoosickhistory.com/pdf/Lovejoy_Chaplet.pdf.

Hu, X., Andrews, D., & Lindstrom, A. (2016). Detection of poly- and perfluoroalkyl substances (PFASs) in U.S. drinking water linked to industrial sites, military fire training areas, and wastewater treatment plants. *Environmental Science & Technology Letters*, 3(10), 344-350.
doi:10.1021/acs.estlett.6b00260

Kalinski, R. J., Kelly, W. E., Bogardi, I., Ehrman, R. L., & Yaniamoto, P. D. (1994). Correlation between DRASTIC vulnerabilities and incidents of VOC contamination of municipal wells in nebraska. *Ground Water*, 32(1), 31-34. doi:10.1111/j.1745-6584.1994.tb00607.x

Knickmeyer, E. (2016, Fix for california trailer park reflects uranium problem. AP the Big Story,

Leow, T. (2016). 'Brockovich' carcinogen found at salem CTEC. Statesman Journal,

Luntz, T. (2009). U.S. drinking water widely contaminated. Retrieved from <https://www.scientificamerican.com/article/tap-drinking-water-contaminants-pollutants/>.

Nicole, W. (2013). PFOA and cancer in a highly exposed community: New findings from the C8 science panel *Environmental Health Perspectives*, 121(11-12) Retrieved from <http://ehp.niehs.nih.gov/121-A340/>

Nielsen, L. (2016). History of manufacturing in Hoosick Falls could relate to water issue. *News 10*. Retrieved from <http://news10.com/2016/02/04/history-of-manufacturing-in-hoosick-falls-could-relate-to-water-issue/>.

NYS Department of Health. (2016). "Hoosick Falls and town of Hoosick: Questions and answers about PFOA blood testing program." Retrieved from <https://www.health.ny.gov/environmental/investigations/hoosick/docs/qandabloodtestingshort.pdf>.

Office of Senator Gillibrand. (2016). Senator gillibrand introduces provision to require EPA to close loophole in current water testing system, test all public water systems in the united states for unregulated contaminants such as PFOA. Retrieved from <https://www.gillibrand.senate.gov/newsroom/press/release/senator-gillibrand-introduces-provision-to-require-epa-to-close-loophole-in-current-water-testing-system-test-all-public-water-systems-in-the-united-states-for-unregulated-contaminants-such-as-pfoa>

Office of Water. (2016).

Drinking water health advisory for perfluorooctanoic acid (PFOA) (No. 822-R-16-005).Environmental Protection Agency.

Penningroth, S. M., Yarrow, M. M., Figueroa, A. X., Bowen, R. J., & and Delgado, S. (2013). Community-based risk assessment of water contamination from high-volume horizontal hydraulic fracturing. *New Solutions*, 23(1), 137-166.

Post, G. B. (2009). Occurrence and potential significance of perfluorooctanoic acid (PFOA) detected in new jersey public drinking water systems. *Environmental Science and Technology*, 43(12), 4547.

Saint-gobain & hoosick falls. (2016). Retrieved from <http://www.hoosickwater.com>

Sutton, R. (2010). Chromium-6 in U.S. tap water. Environmental Working Group.

Steenland, k., Fletcher, T., Savitz, D.,. (2010). Epidemiologic evidence on the health effects of perfluorooctanoic acid (PFOA); *Environmental Health Perspectives*, 118(8), 1100-1108.

Retrieved from http://www.jstor.org/stable/27822994?seq=1#page_scan_tab_contents

U.S. Census Bureau. (2015). American community survey 5-year estimates. Retrieved from <https://censusreporter.org/profiles/16000US3635474-hoosick-falls-ny/>

Times Union. (2016). Hoosick Falls special report timeline. Retrieved from <http://www.timesunion.com/tuplus-local/article/Hoosick-Falls-Special-Report-timeline-7246804.php>.

U.S. Census Bureau. (2015). American community survey 5-year estimates. Retrieved from <https://censusreporter.org/profiles/16000US3635474-hoosick-falls-ny/>

Vierke, L., Staude, C., Biegel-Engler, A., Drost, W., Schulte, C. (2012) Perfluorooctanoic acid (PFOA) — main concerns and regulatory developments in Europe from an environmental point of view. *Environmental Sciences Europe* Bridging Science and Regulation at the Regional and European Level 24:16. Retrieved from <https://enveurope.springeropen.com/articles/10.1186/2190-4715-24-16>

Whelton, A. J., McMillan, L., Connell, M., Kelley, K. M., Gill, J. P., White, K. D., . . . and Novy, C. (2015). Residential tap water contamination following the freedom industries chemical spill: Perceptions, water quality, and health impacts. *Environmental Science & Technology*, 2, 813.

Willard, L. (2017). Hoosick falls elects new mayor. Retrieved from <http://wamc.org/post/hoosick-falls-elects-new-mayor>.