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PUBLIC HERALD Statement to Senate Democratic Policy Committee Regarding the Impacts of Hydraulic Fracturing for Oil & Gas on Drinking Water Resources

September 27, 2021

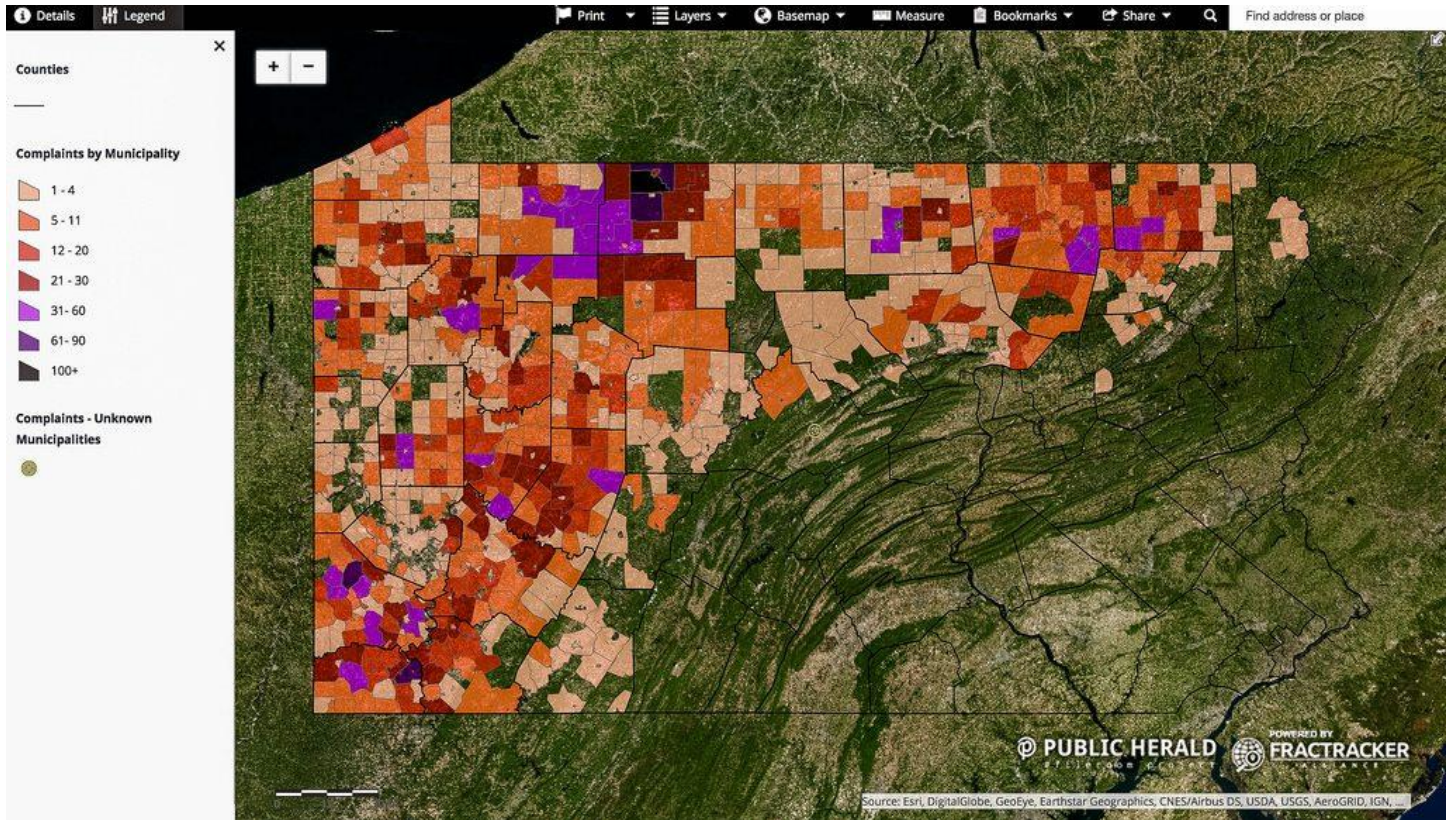
My name is Joshua Boaz Pribanic. I'm an award-winning investigative journalist and Editor-in-Chief of Public Herald, a nonprofit investigative news organization which has investigated fracking's impacts on water in Pennsylvania since 2010. I'm here to request a state and federal investigation of the U.S. Environmental Protection Agency and the Pennsylvania Department of Environmental Protection for criminal misconduct, wherein each agency has ignored or hidden evidence that clearly shows contamination of drinking water supplies related to the development of shale oil and gas that has impacted residents in Pennsylvania and across shale plays for years, subjecting Nature and society to illness and disease through exposure to radioactivity and toxins in surface and groundwater sources.

Ten years of investigations by Public Herald have revealed that there is substantially more water contamination in Pennsylvania than EPA or PA DEP have acknowledged in favor of diluted and false conclusions about the potential impacts of unconventional oil and gas fracking. Any assessment about how widespread and systemic the impacts of fracking are on drinking water should start with the aggregation of water contamination complaint cases and include all water contamination complaint clusters, or radioactivity treatment, storage, and discharges (i.e. from TENORM) that Public Herald has identified from public records in our reports. PA DEP gives the impression that they do aggregate cases by publishing a PDF online that lists all the drinking water complaint positive determination cases DEP has confirmed. However, these are far from all the water contamination cases that actually exist, and there is no public database for discharges that include TENORM, other than the Public Herald TENORM map provided to this committee.

Since 2013, Public Herald has aggregated, mapped and published water contamination data for the state of Pennsylvania, and mapped the holding, treatment and discharge sites for Technically Enhanced Naturally Occurring Radioactive Material (TENORM). These data maps show where water pollution clusters have occurred, cases that specific officials at EPA and DEP have knowingly kept off the books and out of the public discourse. The number of surface and groundwater contamination cases that exist in Pennsylvania is far greater than those listed online by DEP or the EPA.

In 2017 Public Herald revealed 9,442 complaint investigations existed at DEP offices from 2004 through 2016. This report helped lead to the present day attorney general investigation on fracking.

Pubic Herald 2017 Map of Complaint Investigations



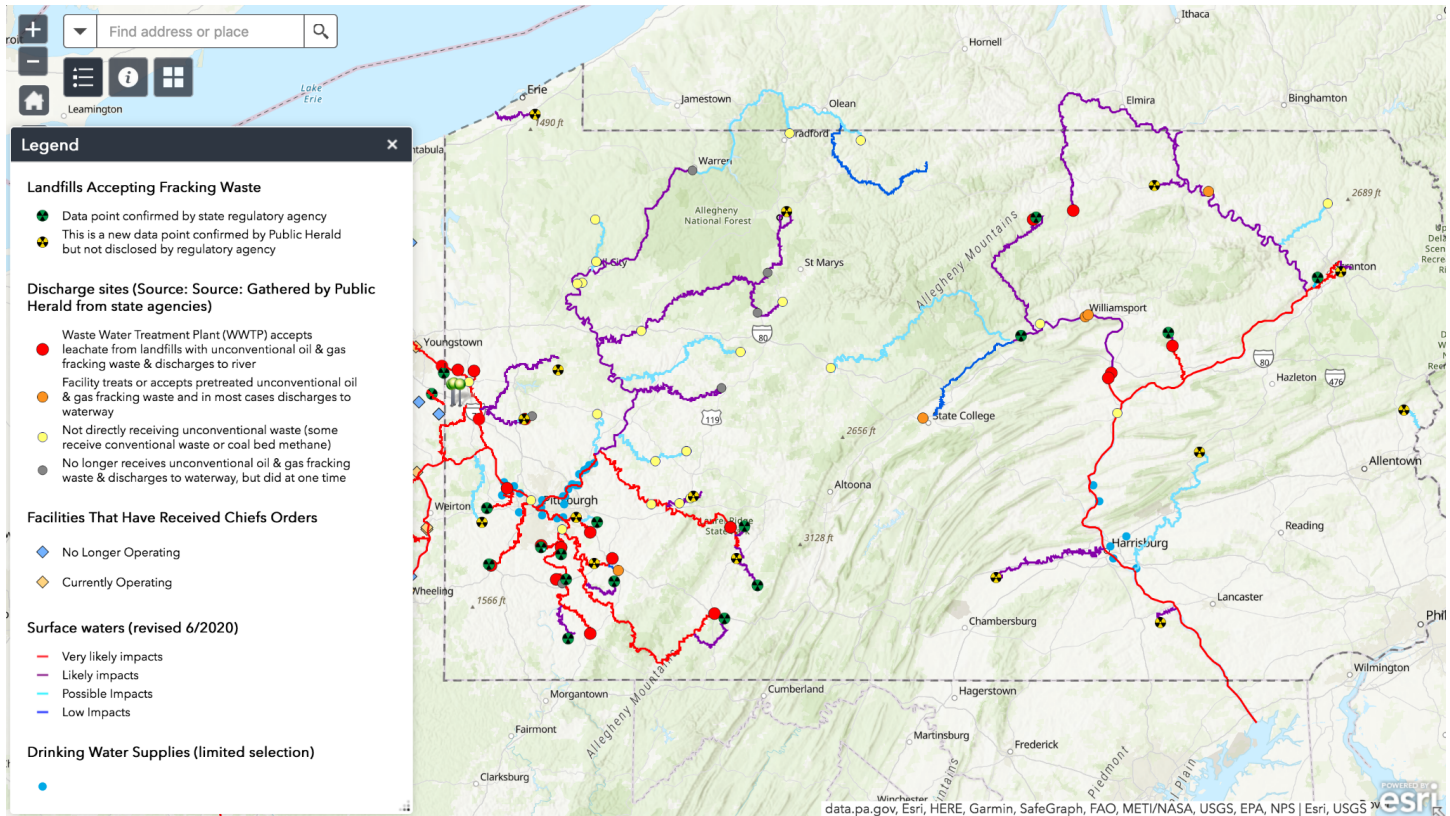
[The Pennsylvania Oil & Gas Complaint Map by Public Herald & FracTracker Alliance](#) shows the density of citizen complaints reported to the Department of Environmental Protection from 2004 – 2016. The widespread dispersal of complaints matches the shape of the Marcellus Shale formation. Clicking a township reveals a database of complaints where viewers can download files. © Public Herald

In Pennsylvania, the final destination of 66 percent of liquid waste from 30 municipal landfills accepting fracking's oil and gas waste remains unknown, according to Public Herald reports. Oil and gas waste from fracking contains high concentrations of Technically Enhanced Naturally Occurring Radioactive Materials (TENORM), and wherever this radioactive TENORM waste is stored, rain carries water-soluble radionuclides such as Radium-226 through the landfill to create what's known as leachate – the landfill's liquid waste. This TENORM-laden leachate is commonly sent to Waste Water Treatment Plants (WWTPs) that are not equipped to remove it before it's dumped into rivers.

If you're talking about fracking, you're talking about TENORM, which is present throughout the process in waste streams like pipe scale, sludge, drill cuttings, wastewater, and contaminated equipment. What starts as

Naturally Occurring Radioactive Material (NORM) contained deep beneath the Earth's surface is brought to the surface by fracking and concentrated into TENORM.

Public Herald 2019/2020 Map: “How TENORM-Laden Leachate From Fracking Waste Gets Into Pennsylvania Waters”



Public Herald's TENORM Leachate Map illustrates where (in red) TENORM from fracking is escaping into public waters, and where (trefoil symbol) it's being stored in Pennsylvania. Map created by NOVARE Collective using Fractracker's 2019 version and Public Herald's research. [Click for interactive map »](#)

What we've discovered is that DEP's 2019 response to Public Herald was missing 17 landfills and 4 WWTPs. It begs the question – does the state really not have a handle on tracking TENORM-laden leachate? Or is the lack of transparency an attempt to keep the public uninformed?

Pennsylvania is known as one of the largest traffickers of waste in the country, producing and importing large amounts of waste for its [45 landfills](#). The 30 residual waste landfills we've identified that have accepted fracking's TENORM waste now actively store dangerous amounts of [TENORM material](#) — mainly Radium-226.

"This is a permanent reactor. Near your house. And it will always be a reactor," Dr. Julie Weatherington Rice, an environmental scientist and expert on oil and gas waste, told Public Herald in a 2020 interview.

In light of this information, it is my right and my responsibility as a journalist to inform the public about the proceedings here today, including who is here and what they have to say regarding an industrial process that directly impacts the health, life and liberty of Americans every day, and has consequences that affect millions of Americans as well as our National Security and Sustainability. Public Herald has already analyzed over 1000 drinking water complaint investigation cases (publicherald.org/dep), and exposed ways in which TENORM is entering public waters (publicherald.org/leachate), to find that PA DEP patterns of misconduct fall into three categories: misfeasance, malfeasance, and negligence.

On the contrary, had EPA chosen to review the same records obtained by our newsroom and discuss those with your committee, we'd be sitting here going over how best to replace the field workers, administrative staff and supervisors of DEP who knowingly put the public in harm's way by neglecting their duties and using politics instead of science to make decisions. The data in these complaint records, and the Public Herald series on TENORM (publicherald.org/TENORM), clearly shows a trail and pattern of misconduct. This has been recognized by the Pennsylvania Attorney General, who has, for reasons unbeknownst to us, chosen to reprimand rather than indict officials at DEP to date. It is now up to your committee and elected officials to act and hold the PA AG office to their duties in order to restore trust and confidence in the state's regulatory agency, and to create accountability for those who have been harmed by this agency.

In this room sits officials who've happily sat back to watch families sign non-disclosure agreement after non-disclosure agreement, while DEP shrouds the public from data about chemicals or radioactivity entering public or private waters — information that would have undoubtedly kept others safe from exposure to these contaminants. While companies are afforded some of the best economic protections in America, where they are allowed to contaminate aquifer after aquifer and still be granted new permits only months after these violations, the public is left with half-hearted investigations from regulators inside of a culture of denial and inability to admit fault.

And this doesn't mean EPA is off the hook. Just as in the Flint water crisis, both state and federal agencies are wading in rivers of evidence without acting on it.

How many more rivers will be subject to discharge levels TENORM in the form of radium-226 that's 20 times higher than the safe drinking water level before regulators decide to act? Radium-226 is a naturally-occurring element found in oil and gas waste with a half-life of 1,600 years — it will accumulate in the environment over time if it can escape a landfill, as it does when the landfill leachate is sent to WWTPs.

The maximum contaminant level for radium in drinking water is 5 picocuries per liter (5pCi/L). And that's the only guideline that WWTP operators have to reference for NPDES permits, though they have no real-time monitoring for radium.

Pennsylvania state records show that fracking wastewater (a.k.a. produced water, flowback, or brine) from unconventional drilling can be as high as 26,600pCi/L for Radium-226. Pennsylvania landfills have made it possible to take this wastewater and store it as residual waste by using machines or wood chips to turn it into a solid.

While Public Herald's Pennsylvania TENORM map has put the possible impacts of radium entering public waters into perspective, we are still missing 66 percent of the leachate data regarding the final destination of fracking's TENORM waste. Why?

Though it contains hazardous materials, oil and gas waste is not considered “hazardous” by the EPA. In 1988, in the Resource Conservation and Recovery Act (RCRA) [Benstell and Bevin Agreements](#), the EPA declared that even though oil and gas waste contains toxic heavy metals, carcinogens, and radioactivity, regulating the waste as “hazardous” would cause “a severe economic impact on the industry and on oil and gas production in the U.S.”

NORM and TENORM from oil and gas operations are also not covered by other federal regulations governing radioactive material, including the Atomic Energy Act.

That leaves it up to Pennsylvania to track oil and gas radioactivity as “residual waste” and send it to the same landfills as household trash — it also up to officials to create new regulations to deal with TENORM.

According to the DEP, the agency is tracking how much TENORM is coming into a landfill by limiting the amount that a landfill can receive in a given year.

But DEP **is not tracking how much TENORM is leaving a landfill via leachate to the WWTP**. The DEP says that the transaction is private between the two entities: the landfill and the treatment plant.

When we told Dr. Julie Weatherington-Rice, a semi-retired earth scientist with a PHD in soil science and adjunct professor for Ohio State University, about DEP’s landfill tracking system for TENORM, she said, “[DEP] has no way of knowing what’s going in” to a landfill in a given year using gate post radiation systems for trucks to pass through and handheld geiger counters.

Dr. Weatherington-Rice continued, “Those gate posts [at landfills] were never designed for that kind of [low level radiation] scanning. They were designed for hospital waste, for something that decays rapidly. Pennsylvania is counting on smoke and mirrors for protection because they’re not using the right test and they’re not using the right equipment. They don’t know what they put in that landfill. They think they do, but they don’t.”

How much leachate are we talking about from 30 landfills? The numbers we have on record suggests there’s millions of gallons of TENORM-laden leachate per day traveling across the state.

So while the tracking of TENORM from oil and gas sites to landfills and onto processing facilities by the DEP is key to understanding public health and environmental risks from both short- and long-term impacts associated with radioactive waste streams, DEP only has parts of the data with faulty testing and alone is the responsible government agency for this data in Pennsylvania.

In 2015, DEP Deputy Secretary Scott Perry cited agency data [hailing the value](#) of radioactive oil and gas waste, rather than addressing its potential health threats:

“For the cuttings alone we generated, just last year, **over two million tons and about 91% of that went to landfills**. There’s actually an interesting environmental benefit there. Landfills need to put on what’s called a **daily cover**, so that the trash doesn’t continue to blow off the landfill, and create problems for the community.”

In 2016, the PA DEP released a TENORM study that claimed [“little potential for radiation exposure from oil and gas development”](#) at the same time finding examples of TENORM contamination in almost every soil and water sample performed. While the state’s press release painted a picture of TENORM safety and containment, the conclusions and details of the study were far from it. The study alerts to future problems if TENORM were to continue being introduced to public waters.

When it comes to fracking and drinking water, what percentage of underground drinking water supplies is acceptable to contaminate within a county or community before regulators will act? How many examples of misconduct must the public share, or Public Herald find, for the Department of Justice to open a criminal investigation of the PA DEP, or EPA?

Public Herald has interviewed hundreds of families who have had similar experiences with DEP. In Angela Smith's story, several problems with the way DEP handles water complaints are highlighted.

In some cases, it is clear that DEP staff find problems with drinking water, but can't link it to nearby oil and gas operations. But in far too many cases, DEP finds evidence and then ignores it, refuses to investigate, or engages in other forms of official misconduct.

MALFEASANCE \ *noun* \

mal·fea·sance \ : committing an unlawful act; often used to describe misconduct by public officials

- **DEP failed to resolve 41% of 4,108 drinking water complaints within 45 days as required by law.** In a response to Public Herald's first report, DEP spokesperson Neil Shader [reported](#) to StateImpact PA that "the majority of complaints are responded to and resolved quickly." While this is technically correct, his statement is deceptive and fails to acknowledge that over 1,600 residents had to wait months or years longer for DEP's determination.
- **The DEP inspector fails to investigate.** Inspectors create excuses — cite past investigations by the Department, distances from gas wells, or background conditions — as reasons to not investigate. However, the law mandates that "the department shall investigate the [complaint]." Cases of DEP staff refusing to sample include: [#300702](#), [#310102](#), [#296204](#), [#292997](#), [#301927](#), [#276365](#), [#303243](#), & [#306597](#).
- **The DEP inspector finds evidence that water has been impacted, but makes a non-impact determination.** Despite initial evidence of water impacts from oil and gas activities, the Department continues the investigation, often sampling past the 45 days permitted by law. Then, as soon as a sample shows a relative improvement in water quality, DEP issues a "non-impact" determination. Examples include [#274235](#), [#257584](#), [#265864](#), [#232327](#). These "non-impact" conclusions mean that *there was never an impact from oil and gas activities*. However, what the inspector is supposed to do is issue a "temporary impact letter." Here are some examples from the Department's list of temporarily impacted water supplies: [#275992](#), [#274997](#), [#269945](#).

- **The Department creates a “non-impact” determination** after a company replaces the resident’s water supply: [#183322](#), [#222376](#), [#250516](#).
- **DEP orders the operator to restore or replace a residents water supply, but fails to issue a positive determination.** In these cases, DEP determines the operator is responsible but considers the case “non-impact.” Examples include [#208970](#), [#215722](#), [#252294](#) & [#222735](#).

IMPORTANCE OF DETERMINATION LETTERS

In 2014, Pennsylvania Auditor General Eugene DePasquale released a [performance audit](#) of DEP outlining several problems with how the Department handles its water contamination investigations. One of the Auditor General’s findings concerned determination letters:

“Water quality investigations that continue for months without a determination are inconsistent with statutory and regulatory provisions and are a serious impediment to complainants’ quality of life...DEP should ensure that clear and understandable ‘determination letters’ are always issued to complainants in water supply investigations and in a manner that does not allow for misinterpretation.”

In their response to the Auditor General, DEP acknowledged the importance of mailing determination letters to residents. DEP claimed that there were only a “few instances” when determination letters were not sent and that “these isolated instances are not indicative of the Oil and Gas program.”

[Determination Letters \(p. 7\)](#)
[View entire document on DocumentCloud](#)

After a closer look, DEP’s claim that they rarely fail to send determination letters is deceptive.

Between February 2007 and October 2012, DEP resolved 1,978 complaints but only provided [973 letters](#) to Scranton Times-Tribune for the newspaper’s Right-to-Know (RTK). This means over 1,000 determination letters were unaccounted for during that time period. Either the letters didn’t exist, or DEP failed to provide them for the Right-to-Know.

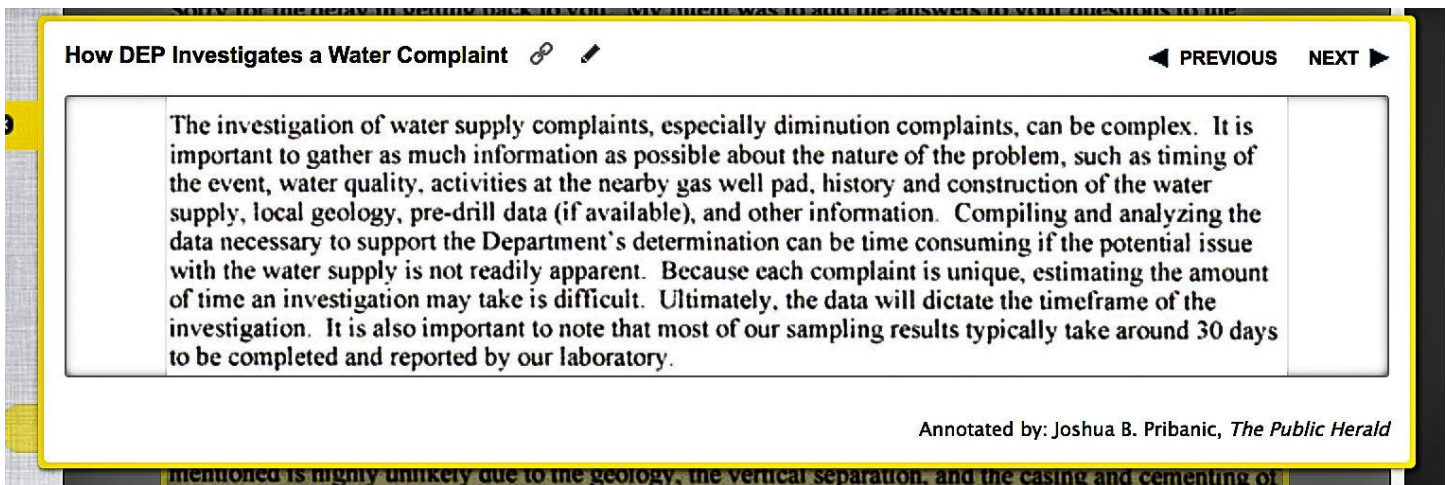
During Public Herald’s file reviews in 2016, the staff at the DEP Southwest Regional Office could only produce a small number of determination letters for 1,167 water complaint investigations.

Based on the problems we experienced and the available data, failing to send determination letters is not isolated to a “few instances,” and families have been robbed of information about their drinking water.

MISFEASANCE \ noun \

mis·fea·sance \ : lawful act performed in wrongful manner.

When a DEP inspector investigates a water supply complaint, they are supposed to do so using scientific methods. Bill Cosmer, a professional geologist at DEP, explained to resident Christine Pepper during her complaint about what a comprehensive investigation looks like:



The screenshot shows a document titled "How DEP Investigates a Water Complaint" with navigation links for "PREVIOUS" and "NEXT". The main text describes the complexity of water supply complaints and the time-consuming nature of investigations. The text is as follows:

The investigation of water supply complaints, especially diminution complaints, can be complex. It is important to gather as much information as possible about the nature of the problem, such as timing of the event, water quality, activities at the nearby gas well pad, history and construction of the water supply, local geology, pre-drill data (if available), and other information. Compiling and analyzing the data necessary to support the Department's determination can be time consuming if the potential issue with the water supply is not readily apparent. Because each complaint is unique, estimating the amount of time an investigation may take is difficult. Ultimately, the data will dictate the timeframe of the investigation. It is also important to note that most of our sampling results typically take around 30 days to be completed and reported by our laboratory.

Annotated by: Joshua B. Pribanic, *The Public Herald*

But, in some complaints, DEP staff failed to thoroughly investigate. This is evident both in the complaint records and first hand [accounts](#) from residents with investigations.

- **DEP fails to conduct comprehensive water sampling:** Because fracking involves a host of chemicals, a reasonable, scientific approach would include testing for volatile organic compounds (VOCs) and BTEX (benzene, toluene, xylene, ethylbenzene) according to Duquesne University's Dr. John Stolz, who has conducted extensive water testing related to fracking. Examples include [#302947](#), [#280927](#), [#269441](#), [#288420](#).

In the following video, DEP inspectors visit a complainant's home but choose not to sample the water. Instead, inspectors check for methane gas but explain that such a reading doesn't show dissolved methane in the water. In [other cases](#) DEP did not find combustible gas in the 'glass trick' as seen in the video, but detected it in the water sample sent to a laboratory. (Video: Case #313290)

find video at publicherald.org/dep

In this video by [journalist Julie Dermansky](#), a DEP inspector explains that he samples for whatever seems right at the time, rather than doing a comprehensive set of testing.

find video at publicherald.org/dep

- **DEP claims oil and gas is not responsible based on scientifically arbitrary distance** — this a misuse of the “presumption of liability” clause of [Section § 3218](#). This clause states that if a water supply is within 1,000 or 2,500 feet of a gas well, the operator is presumed responsible. Nowhere in the law does it say that contamination should be dismissed based on this distance. However, DEP inspectors have refused to sample or made non-impact determinations for complaints based on the fact that residents live outside this arbitrary ‘zone of presumption.’ Examples include: [#250516](#), [#281087](#), [#300702](#).
- **The Department does not provide sufficient evidence for their non-impact determination.** DEP inspectors sample drinking water, find elevated compounds typical of oil and gas impact, but make a non-impact determination. Often, they provide no explanation, other times they explain away the results, stating that contaminants are related to “background conditions,” without providing any evidence. Examples include: [#286101](#), [#273912](#), [#226074](#), [#269114](#), [#286492](#), [#285757](#), [#281364](#).

NEGLIGENCE \ noun \ neg·li·gence \ :
failure to use that degree of care
which a [reasonable person](#) would
use under the same circumstances.

The Department is not operating with full transparency. Our investigation has found that DEP fails to disclose all water contamination impacts to the public and chooses to apply the bare minimum effort required by law.

- **DEP shreds “non-impact” complaint records after five years, according to the Department’s “special handling” [retention policy](#) and does not create a backup (PDF, microfiche) of records.** Other files at the Department are kept for up to 100 years.
- **DEP does not sample or send a determination letter for pipeline related water complaints.** DEP inspectors state that pipelines are not covered in Section 3218, using it as an excuse not to use the degree of care they would in other water complaint cases. [#281744](#), [#293769](#), [#271387](#).

- **DEP does not list all positive determinations on their website.** Public Herald has found [49 cases](#) of water supply contamination related to oil and gas activities that have been confirmed by DEP, but not listed on their [website](#). DEP failed to produce 18 of these 49 cases for Public Herald's record requests.

The Department has [disclosed](#) that 284 private water supplies have been impacted by "both conventional and unconventional drilling activities." DEP also states that the list is "intended to identify historic water supply impacts." Their description gives the impression that all confirmed cases are included in this list. But this is not true.

If DEP included the additional 49 cases of confirmed impact, that would increase the total number to at least 333. But as clearly demonstrated by this report, even that is far from the total number of drinking water supplies impacted by oil and gas operations across the state.

All of you sitting here today may not know the answer to these questions. But, I can assure you our team at Public Herald knows the ceiling has been reached. I'm speaking to you today in the hopes that you'll use this evidence to do what is right, and that you'll move to questioning the Pennsylvania Attorney General and Department of Justice about a criminal investigation of PA DEP. I hope my time here is not in vain. More than anything, I hope that the corruption of public health and public trust will be vindicated by your actions after this hearing.

Respectfully,

Joshua Boaz Pribanic (ki/kin)

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"If you bury truth underground, it will but grow." Emile Zola



