

LOOPHOLES IN PROPOSED DRBC WASTEWATER REGS WOULD ALLOW FRACKING TOXINS TO POISON OUR LAND AND WATER.

A comment period is open until February 28, and your feedback to the Delaware River Basin Commission will make all the difference.

Here we provide for you:

- Basic information about how to submit a comment
- Facts about the loopholes; facts about why the waste is dangerous; and references to more detailed information for those who want to learn more, to help inform your statement.

HOW TO COMMENT: Go to the DRBC online [portal](#), fill in the form with your personal information and enter your comments. You can make as many comments as you want. A hearing has been added on February 3 in response to pressure from the coalition and concerned people like you, at which you can speak if you have not already done so; Spanish translation and the opportunity to send postal mail comments have also been added. See <https://www.damascuscitizensforsustainability.org/2022/01/26/latest-on-the-drbc-frack-ban-rules/>

By far the most powerful way to make a difference with the commission is to write a comment in your own words, though if you wish you may selectively copy and paste from the verbiage or other references we provide.

Note that we, other members of the Delaware River Frack Ban Coalition and other environmental advocacy groups will send comments containing detailed scientific arguments with all the facts and references, so don't worry about repeating all the information in your submission.

The main thing is for you to **stand up and be counted as a well-informed basin stakeholder who is deeply concerned and has good reason to be.**

THE LOOPHOLES: Import and export

LOOPHOLE 1: Import of wastewater allowed

Under the proposed regulations, discharge of fracking wastewater directly to the water or land of the Delaware River Basin is prohibited, but import is allowed.

The obvious questions are: where will the wastewater be and what will it be doing while it is in the basin? And how is it possible to prevent its toxins from being released into the environment while it is here?

There are three things it could be doing:

1. Being transported
2. Being stored
3. Being processed at some facility for some further purpose

For each one of these categories, it is clear that contamination is inevitable.

Transport Problems

The transport of wastewater could be expected to take place on trucks, which carry the vast majority of wastewater away from fracked wells.

In a world with drivers who never get tired or make a mistake, 100% compliance by companies with truck maintenance requirements, strong regulatory enforcement mechanisms, and zero traffic accidents, it is possible that spills and leakage from transport could be avoided (although additional diesel air pollution and road damage from massive increases in heavy truck traffic could not).

That's not the world we live in:

- Wastewater is one of the top three materials spilled in fracking activities, including during transportation, according to a study cited by the US Environmental Protection Agency (EPA) in its seminal 2018 report regarding oil and gas wastewater¹. EPA documents that these releases have negative impacts on water quality and aquatic life; the harm can persist for years after a spill (See "How Fracking Waste Can Hurt Us" section below).
- Studies also indicate that wastewater trucking activities are subject to extremely high accident rates. One focusing on an area in the Bakken found that, specifically during post-fracking periods when trucks are carrying masses of produced water away from fracked wells, fatal traffic accidents in the vicinity increased by a whopping 8%, suggesting a severity easily high enough to produce accompanying leaks and spills². If the DRBC regulations were passed, that same type of truck traffic would be carrying that water on into the basin as a destination.
- The risk of accident is also underlined by the fact that oil and gas vehicle accidents make up around 18% of all oil and gas industry fatalities, according to a National Institute for Occupational Safety and Health study³.
- Increasing the likelihood of accident is that here, as in so many cases, the government has created a special loophole for the industry: Federal Motor Carrier Safety Administration (FMCSA) regulations only require oil/gas industry drivers to take 24 hours off for every 60 hours of driving, compared to 34 hours for other drivers⁴.

¹ U.S. Environmental Protection Agency (EPA), Engineering and Analysis Division, Office of Water, published a report in May 2018 entitled "[Detailed Study of the Centralized Waste Treatment Point Source Category for Facilities Managing Oil and Gas Extraction Wastes](#)" EPA-821-R-18-004

² See "Fraccidents: the impact of fracking on road traffic deaths," <https://marcellusdrilling.com/wp-content/uploads/2020/03/SSRN-id3175558.pdf>

³ <https://www.cdc.gov/niosh/docs/2017-193/2017-193.pdf>

⁴ <https://www.cdc.gov/niosh/docs/2017-193/2017-193.pdf>

- Another regulatory loophole is the fact that despite being highly toxic (see “How Fracking Waste can hurt us” below), waste from the oil and gas industry is exempt from being classified as hazardous, and therefore is not subject to regulations imposing special safety requirements and handling, including appropriate labelling of trucks and tracking of the waste.
- Studies cited by the EPA show that the likelihood of spills increase as the volume of wastewater and number of trips increase. And the volumes involved are huge: according to a 2017 study, close to two and a half billion gallons a year were produced in Pennsylvania at that time,⁴ and those numbers can only have risen since then as horizontal well bores have increased in length. Per-well volumes have risen by three or four times since that estimate, so the total has presumably increased accordingly^{5, 6}.

The Delaware River Basin is located right next to that huge and rapidly swelling tsunami of wastewater; the industry is running out of places to dump it, and the proposed DRBC regulations, by allowing import, have laid out the welcome mat. Combined with accidental spill rates, traffic accidents, exemptions that loosen regulation of oil/gas trucks and potential illegal dumping, it is inconceivable that a significant problem with spills and leakage could be avoided. It is human and environmental health that will suffer as a result. Waste import must be banned - after all, it is the toxic nature of drilling that led to the ban of actual drilling in the basin.

Storage Problems

As large quantities of wastewater come into the basin to be stored here, the likelihood increases that spills and leaks of toxic materials from the containers holding it will occur, while transloading of wastewater into and out of containers further increases that likelihood.

- Without DRBC permitting, the regulation of storage facilities lies with the state. In Pennsylvania, General Permit WMGR123, issued this year with an expiration date of 2031, is used for storage of fracking and drilling wastewater. This lax permitting allows for many pathways of pollution to arise due to inadequate controls and management of these storage sites.
- The wastewater produced by fracking that is regulated under the PA General Permit will be held in “temporary” storage units that may not be designed to hold the potentially corrosive and/or concentrated materials found in this waste stream; these containers can

⁵ <https://www.babstcalland.com/news-article/epas-draft-study-of-produced-water-management-in-the-oil-and-gas-industry/>. The quote from this is, “A study of recent Pennsylvania Department of Environmental Protection (DEP) data tracking oil and gas waste management in Pennsylvania reported approximately 57 million barrels [2,394,000,000 gallons] of liquid waste were produced in 2017, 95 percent of which was produced water.” and <https://www.fractracker.org/2019/01/injection-wells-in-pennsylvania/> this likely summary from <https://www.depgreenport.state.pa.us/ReportExtracts/OG/OilGasWellWasteReport> and the fractracker links to <https://www.nature.com/articles/srep46582> also the Troutman report here <https://earthworks.org/publications/pennsylvania-oil-gas-waste/>

⁶For more details see <https://sites.google.com/view/delawariverfrackban/>, under “Watershed Wednesdays #4” and “Watershed Wednesdays #6”.

be kept on site for a year or more or for the life of the General Permit (until 2031), defying the definition of “temporary”.

- There is no requirement limiting the size or capacity of these units, which are being built in enormous sizes today.
- Additionally, testing is less frequent and fewer parameters of the fluids are tested for under the PA General Permit, making it more likely that pollutants will go unidentified and undetected, compounding containment and cleanup problems should there be a release to the environment and making air emissions unknowable. You can't test to see what is polluting your water supply without that information⁷.
- In the other basin states, New York, New Jersey and Delaware, the handling of waste (including open pits, and other storage aspects) differs but regulatory rules are often not clear.
- Finally, industry exemptions from disclosing the identity of certain components of their produced waters makes attempts to regulate adequate materials, construction and maintenance standards effectively impossible, with regard to e.g. their corrosiveness or other qualities that may facilitate their escape.⁸

Pollution from facilities processing or otherwise using the wastewater

The proposed regulations would permit facilities that use or treat fracking wastewater in the river basin, but that do not by a formal definition “discharge” that wastewater into land or water. But direct “discharge” of the wastewater itself into the environment is not the only way that land and especially water, the DRBC’s special charge, can be contaminated by the imported toxins. Air pollution and the emission of radioactivity are particular concerns.

- Systems that could operate in the watershed without formally “discharging” wastewater could include incineration, thermal oxidation, air-drying systems, and other waste processing facilities that allow emissions to air, which is not regulated by DRBC.
- An example of this is a project proposed by Elcon Recycling Services, LLC, for Falls Township, PA, using a thermal oxidation design (which was rejected). With no direct water discharges, this process nevertheless emits highly toxic emissions to the air, which would deposit on water, land, soil, and vegetation, spreading pollutants into the airshed and watershed
- Technical analysis revealed that approximately 39 tons of air pollution would be emitted, affecting the air quality within a 30-mile radius; the Philadelphia Water Dept. opposed the project due to potential pollution. It was withdrawn in face of public opposition, and so DRBC approval at that time became moot; but this the type of project that could claim to

⁷ For more details see <https://sites.google.com/view/delawareriverfrackban/>, under “Watershed Wednesdays #5” -on the classification of the waste and #7 on storage of the waste

⁸ *ibid.*

evade the “no discharge” limitation of the currently proposed regulations and become our bad neighbors if such facilities are not banned⁹.

- With regard to any facility that claims to treat fracking wastewater, even if the water itself were successfully decontaminated (and it’s not clear that’s possible), the question remains what happens to the highly concentrated toxic sludge formed by the removed substances. It still would have to be transported and disposed of somewhere. How would that be done? And how would yet more avenues of contamination, this time of artificially high concentrations of toxicity, be avoided?
- With regard both to treatment facilities, and to transport and storage facilities, radioactivity is an insoluble problem. Marcellus Shale is known to have extremely high levels of radioactivity, with samples of produced waters showing combined concentrations of radium 226 and 228 as high as 28,500 picocuries per liter, compared to an EPA drinking water standard of maximum 5 picocuries per liter. Average levels of radioactivity in drilling waste range lower, but given the vast volumes involved the cumulative effect can be significant¹⁰.
- Industry itself has admitted the insolubility of the problem. As long ago as 1982, an American Petroleum Institute report titled “An Analysis of the Impact of Regulation of ‘Radionuclides’ as a Hazardous Pollutant on the Petroleum Industry” said: ¹¹

“Almost all materials of interest and use to the petroleum industry have measurable quantities of radionuclides that reside finally in processing equipment, product streams, or waste;

Any control methodology proposed for radioactive material must recognize the fact that radioactivity cannot be modified or made inert by chemical means;

Any attempt to remove radioactivity is merely transforming a very dilute source of radioactive materials into a very concentrated source of radioactivity.”

The report concluded that the regulation of radionuclides could impose a severe burden on API member companies. Not long after, industry lobbying efforts succeeded as having the waste designated legally as “special,” rather than “hazardous,” which it is. The EPA had specifically stated that the change was done only due to economic impact on the industry, and despite the actual scientific hazards of the material¹².

⁹ For more details see <https://sites.google.com/view/delawareriverfrackban/>, under “Watershed Wednesdays #2” - on the oil and gas industry’s exemptions

¹⁰ *ibid*

and see <https://www.damascuscitizensforsustainability.org/2021/09/04/radioactivity-in-fracking-too-hot-to-handle-webinar/> and <https://www.nrdc.org/resources/hot-fracking-mess-how-lack-regulation-oil-and-gas-production-leads-radioactive-waste-our>

¹¹ “An Analysis for the Impact of the Regulation of ‘Radionuclides’ as a Hazardous Air Pollutant on the Petroleum Industry,” Prepared for the Committee for Environmental Biology and Community Health, Department of Medicine and Biology, American Petroleum Institute, October 19, 1982.

¹² See footnote 7 above

- A recent example of this type of failure is the Eureka Resources facility located in Williamsport, PA, which claims to be able to treat wastewater to a standard it can be discharged into public waterways. According to the PA DEP's own data, the most recent measurements of the plant's operations show the radioactivity of the supposedly "treated" effluent actually higher than that of the untreated influent, at 12,700 picocuries per liter vs. 10,300 picocuries¹³.
- An initial PA DEP study of the facility in its starting state did show a reduction of radioactivity in effluent below background levels. But accumulation of scale and exposure of the equipment to radioactivity over time has apparently nullified this effect. The DRBC does not want to be in the position of allowing such technology into the river basin because it works great on paper, only to find a few years down the road that it has invited a radioactivity-concentrating facility.

LOOPHOLE 2: Water export allowed

The proposed regulations would allow for export of water from the basin for the purpose of fracking elsewhere.

- Export of water from the Delaware River Basin would deplete those resources, and deprive the springs, tributaries, and mainstem Delaware River of critical flows and quality. This would compound the problems of managing the water needs of the member states—already a contentious matter.
- Though the chief problems would obviously occur during droughts, we already know that climate change is making weather extremes of all kinds more likely; that includes not only excess precipitation, but also dry spells—as explicitly recognized on the DRBC website¹⁴. The DRBC should not be making plans that complicate its management of the droughts that it, itself, concedes are coming.
- Another consideration regarding the export of water is the potential for the use of pipelines to carry the water out of the watershed, with both construction and maintenance creating disturbances and destruction of natural drainage systems, protective forest cover, streams and tributaries crossed by the pipelines, and more. And the DRBC has not taken full jurisdiction of pipeline projects in its review of such projects under current regulations, limiting any control it might have over this damage.
- Though transfers of water from one watershed to another are not technically considered "consumptive," presumably because the water can still be sustainably recycled in the

¹³ Pennsylvania Senate Democratic Policy Committee Hearing held September 30, chaired by Sen. Kate Muth, (<https://www.senatormuth.com/policy-committee-hears-support-for-closing-hazardous-waste-loopholes/>), Justin Nobel oral testimony and PowerPoint slide of source document Pennsylvania Department of Environmental Protection, from "Technologically Enhanced Naturally Occurring Radioactivity Materials Study," 2016., at approx. 3:20. 3 Ibid, oral testimony by Josh Pribanic of Public Herald, at approximately 3:39-42

¹⁴ Delaware River Basin Commission "Climate Change" page, <https://www.nj.gov/drbc/programs/flow/climate-change.html>

destination basin, fracking—in this case the destination activity—is “depletive”: It represents a rare complete loss of sequestered water to the natural hydrologic cycle. Wastewater is either disposed of in injection wells specifically designed to be separated from usable aquifers, or will come back up irreparably polluted (see more under “How Fracking Hurts Us”). Removal of water from the Delaware River Basin for purposes of fracking is a dead loss to the biosphere.

- Export of water from the Delaware River Basin, by promoting fracking elsewhere, would exacerbate climate change, which as the DRBC itself recognizes, is a threat to the river basin¹⁵.
- The composition of natural gas is about 95% methane. Methane leaks or is vented or flared at all stages of the natural gas process (extraction/production, gathering, processing, transmission, storage, local distribution and consumption). Methane is 86 times more powerful than carbon at heating the atmosphere on a 20-year time scale, 104 times more powerful than carbon over a 10-year period. The other 5% of natural gas can be any of a mix of just CO₂, but can also be poisonous hydrocarbons like BETX materials, benzene, ethylbenzene, toluene and xylenes and radon.
- Export of water to other areas of the Marcellus shale for fracking would encourage and facilitate fracking in the biggest natural gas field in the United States, postponing the urgently needed phaseout of this field. It would contribute to planetwide catastrophe of which the Delaware River Basin would experience its fair share, and in doing so the agency would abdicate responsibility to protect the basin from threats like flooding, drought, and the upstream movement of the current salt-water line on the main stem, endangering water for the Philadelphia area^{16,3}

HOW FRACKING WASTE CAN HURT US

- Fracking wastewater contains carcinogens, endocrine disrupting chemicals, heavy metals, poisonous hydrocarbons, radioactivity and extremely high salt content. Included in the mix are the toxic BETX materials, benzene, ethylbenzene, toluene and xylenes. In its national study of fracking and drinking water, EPA identified 1,606 chemicals in fracking fluid or drilling wastewater including 1,084 identified in fracking fluid and 599 identified in wastewater, yet only 173 had toxicity values from sources that met EPA's standards for conducting risk assessments¹⁷.

¹⁵ *Ibid*

¹⁶ For more details on the damage climate change can do to the river valley, see <https://sites.google.com/view/delawareriverfrackban/>, under “Watershed Wednesdays #3”

¹⁷ U.S. Environmental Protection Agency. Hydraulic fracturing for oil and gas: impacts from the hydraulic fracturing water cycle on drinking water resources in the United States. Washington, DC: Office of Research and Development; 2016, at ES-45 to ES-46 and 9-1. EPA Report # 600/R-16/236F. See <https://www.epa.gov/hfstudy>.

- The periodically updated “The Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking¹⁸”, put together by the Concerned Health Professionals of New York (and originally created as a comment submission to the New York State Health Department in its review of the impacts of fracking that resulted in the state’s ban) contains a massive list of human health impacts of fracking, including from all the processes and the waste¹⁹.
- Specifically applicable to the DRBC as mandated to be manager of healthy water resources, fracking waste spills into waterways have devastating effects on aquatic life. For instance, when a small amount of fracking fluid spilled into Acorn Creek, in Kentucky—a previously pristine body designated an Outstanding State Resource Water—state and federal scientists found that the toxic fracking waste “killed virtually all aquatic wildlife in a significant portion of the fork,” and noted that ““Our study is a precautionary tale of how entire populations could be put at risk even with small-scale fluid spills.”²⁰”
- A large-scale example is the death of 38 miles of Dunkard Creek (also called Long Creek) (along the Pennsylvania, West Virginia border)—161 species, thousands of individual creatures, a host of fish species from minnows to 3-foot-long muskies.²¹ They perished from the transformation of the fresh-water vibrant small river into a saline (salt) environment that allowed the growth of golden algae that only lives in saline waters. The golden algae bloomed and died, producing a poison that the river’s death was eventually blamed on.²² That algae never could have lived in the creek without the allowed and illegal dumping of very salty frack waste that went into the creek from coal mine drainage, illegal dumping by transporters, a close fracked well and an over pressured injection well. Seven years later with restocking, “...the full recovery is still years away.”²³

¹⁸ <https://concernedhealthny.org/compendium/#:~:text=The%20Compendium%20of%20Scientific%2C%20Medical,%20journalists%2C%20and%20the%20public>

¹⁹ <https://concernedhealthny.org> in seventh edition and in Spanish

²⁰ <https://www.nrdc.org/experts/amy-mall/fish-and-wildlife-entire-populations-risk-even-small-fracking-spills>

²¹ <https://www.damascuscitizensforsustainability.org/2009/09/22/sudden-death-of-ecosystem-ravages-long-creek/> and <https://www.damascuscitizensforsustainability.org/toxic-frac-brine/>

²² https://observer-reporter.com/news/localnews/dunkard-creek-recovery-effort-will-take-years-after-sweeping-2009-fish-kill/article_597989c6-a57f-506a-89a6-e5986592cd10.html

²³ *Ibid.*