

Delaware River Frack Ban Coalition Top Ten Talking Points on proposed fracked gas wastewater import and water export for fracking regulations

The DRAFT Regulations

The Delaware River Basin Commission (DRBC) has issued draft regulations pertaining to the import of wastewater produced by fracking and the export of water from the Delaware River Watershed for fracking outside of the Basin. The public comment period is open now and will close February 28, 2022. See the proposed rules here:

https://www.nj.gov/drbc/meetings/proposed/notice_import-export-rules.html#3

For a deep dive into the issues involved with the draft regulations, and suggestions for specific topics from your comment, go to:

<https://sites.google.com/view/delawareriverfrackban/>

Top Ten Suggested Talking Points

Here are Top Talking Points for your consideration at the DRBC's upcoming public hearings:

1. Wastewater produced by fracking **MUST BE COMPLETELY** and **CATEGORICALLY BANNED**

The pressure is on – the industry is looking for places to dump its wastewater. The continuing trend in the Marcellus shale to drill supersized wells, with horizontal well bores up to 4 miles long¹, has increased volumes of wastewater produced by each fracked well. Approximately 10-15% of the 10 to 20 million gallons of water injected for fracking comes back to the surface as flowback. That means between 1-1.5 million gallons of wastewater (at 10M gal. of water) to between 2 and 3 million gallons of wastewater (at 20M gal. of water) per well, increasing the volumes three to four times over what fracked wells produced just a few years ago. This adds a glut of wastewater that has to go somewhere and the industry is targeting the Delaware River Basin and, with these draft regulations, the DRBC is opening the door. The Delaware River Watershed's proximity to one of the most productive regions of the Marcellus Shale play, in the northeastern portion of the Susquehanna Watershed, makes it especially attractive.

¹ <http://www.post-gazette.com/powersource/companies/2018/01/15/These-days-oil-and-gas-companies-are-super-sizing-their-well-pads/stories/201801140023>

The draft regulations would allow wastewater produced by fracking to be imported into the watershed. The discharge of fracking wastewater is proposed to be prohibited, which is essential, but there are other systems that could operate in the watershed such as incineration, thermal oxidation, air-drying systems, and other waste processing and storage facilities that could avoid discharging to water and land but allow emissions to air, which is not regulated by DRBC. The wastewater could also be repurposed in what is euphemistically called “beneficial reuse” such as in closed-loop cooling water systems and cement manufacturing.

The pollution emitted into the air by the burning, thermal oxidation, evaporation or air-drying of toxic and radioactive frack wastewater may not technically discharge to water under DRBC’s Water Code, but it would still be an import of fracking pollution that would endanger human health and the environment and spread fracking’s footprint even further than it reaches today.

Another example of how fracking pollution would be allowed under the proposed regulations is the storage of fracking wastewater, which is desperately needed by the fracking industry that has far too much waste to process and, like other polluting industries, creates so much waste there is always a backlog.

Additionally, the transport into the watershed and the handling of frack wastewater that would be processed, stored, disposed or reused here poses tremendous risk of leaks, spills, accidents, sabotage or intentional dumping. You can't prohibit spills and leaks. Accidents are not a matter of if, but when. Intentional illegal dumping does occur, unfortunately, where there is the opportunity. Right now, there is no threat of a fracking waste spill from wastewater destined for the Basin. DRBC needs to keep it that way.

Commissioners, these loopholes are major flaws in the draft regulations that **MUST BE PLUGGED** by a complete ban on the import, processing, discharge, reuse and/or disposal of wastewater produced by fracking.

Commissioners, your public input process shuts people out. Anyone who wants to comment should get the chance. Provide a public participation process that works for everyone. And one more thing, Full Frack Ban Now!

2. A specific example of a system that can be used to process wastewater without a discharge to land or water, escaping the jurisdiction and permitting by DRBC:

Elcon Recycling Services, LLC²: Thermal oxidation design: This process does not have a discharge to water or land but emits highly toxic emissions to the air, which would deposit on water, land, soil, and vegetation, spreading pollutants into the airshed and watershed - polluting both our air and water. The thermal oxidation/distillation process produces an oxide sludge by using heat and evaporation. Water-insoluble solids, volatile organic compounds, and the water-soluble salts are separated out in a physical-chemical separation process and the sludge residues removed for disposal. The crystallized salt residues contain large amounts of table salt, but may also contain toxic bromine salts, radioactive strontium and radium compounds, soluble cadmium salts, and compounds of non-metallic elements such as arsenic and selenium. Selenious acid is highly soluble in water and extremely toxic to all types of aquatic creatures and the pollutants emitted pose extreme danger to human health.

The proposed Elcon hazardous waste processing facility was a thermal oxidation design that was going to be located on the Delaware River in Falls Township PA. 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, impacting their water intakes 15 miles downstream.

Wastewater produced by fracking was one of the possible components that would be processed there. The DRBC published a public notice of the application it received from Elcon for this “zero-discharge” processing plant in 2018 but did not rule on the project. The project was stopped in 2020 by public opposition but thermal oxidation is a good example of a non-discharge highly polluting process that can escape DRBC’s jurisdiction if frack wastewater is allowed to be imported here.

Commissioners, don’t open up our watershed to pollution from fracking, don’t let the industry backdoor DRBC, don’t allow pollution from fracking to occur despite your ban on fracking.

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3. A specific example of a system that can be used to process wastewater without a discharge to land or water, escaping the jurisdiction and permitting by DRBC:

² https://www.njleg.state.nj.us/2020/Bills/AR/37_11.PDF

Synagro: A thermal drying system evaporates water from materials and can be used to process wastewater or sludge, reducing moisture content. The product has reduced volume and weight and can be reused or disposed. A surface water discharge can be avoided by removing the effluent offsite. A sludge drying facility was proposed by Synagro Technologies, a sewage sludge processing company, and Waste Management Inc. on the border of Pen Argyl and Plainfield Township, Northampton County, PA.

Sewage sludge drying releases into the air human pathogens, industrial waste components, heavy metals, chemicals, radioactive materials, pesticides, pharmaceuticals, microplastics, poly- and per-fluorinated compounds, and a toxic small article dust – all of which carry adverse human health, wildlife, and environmental impacts that are inescapable for those in the airshed and also in watershed, due to the deposition of these pollutants on water.³

The plant was stopped by public opposition but it would have been located on two high quality streams Little Bushkill Creek and Waltz Creek, both protected under PA's Special Protection Waters Program. When Synagro realized that their proposed discharge would have to meet strict standards and be approved by the DRBC, they quickly withdrew their surface water discharge and switched to a plan to truck the wastewater offsite for disposal. The facility identified to receive the wastewater was in eastern New Jersey, out of the Delaware River Watershed.

Commissioners, polluting facilities like Synagro have tried to set up shop in the Delaware River Watershed without triggering your jurisdictional review by avoiding the discharge of wastewater. Synagro went to extraordinary measures to avoid your review and oversight with the reckless proposal to truck out the toxic wastewater that the facility would have produced every day, risking even more harm to the community and the environment. This is what you can expect from the fracking industry if the DRBC draft regulations are not revised to BAN the import of frack wastewater completely.

Commissioners, your public input process shuts people out. Anyone who wants to comment should get the chance. Provide a public participation process that works for everyone. And one more thing, Full Frack Ban Now!

4. When they say hazardous is not hazardous

³ Synagro Fact Sheet: <https://bit.ly/3rgYais>

The hazardous waste properties of wastewater produced by fracking are not recognized by the government, which allows fracking waste to be handled, transported, and disposed through less restrictive processing systems than would be required for contaminants classified as hazardous waste.

Waste from oil and gas mining was re-named 'special' by the Bentsen amendment to the Resource Conservation and Recovery Act (or RCRA) in 1980 so that these wastes would not be regulated as the toxic materials that they are. RCRA takes a "cradle to grave" approach to ensure wastes are handled properly from the point of creation to transport to disposal. As 'special' wastes, drilling fluids, produced water, hydraulic fracturing fluids are unregulated toxic substances. Additionally, that change isolated the gas and oil companies from the liability they would have if this waste were regulated as toxic under RCRA.

Because it is labeled 'special' does not mean that it is not toxic - it is toxic and very harmful. The liquid wastes contain 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 assessments.⁴

The treatment process releases this pollution through various pathways. While it is essential that discharges of this effluent to water and land be prohibited, emissions to air can be toxic and damaging to human health and the environment as they are released into the surroundings as poisonous, smog producing air pollution.⁵

Commissioners, just because they say it isn't hazardous, doesn't make it so. The proof is in the dangerous and polluting constituents of frack wastewater that make it, in the real world, hazardous.

⁴ 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> .

⁵ *Ibid.*

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5. Transportation into the Watershed for processing, storage, reuse or other purposes threatens the release of dangerous fracking wastewater pollution

Inviting the import of frack wastewater into the Delaware River Watershed will mean a much greater opportunity for pollution incidents and the handling and transloading of this toxic fluid once it is our watershed will increase the likelihood even more. The transportation of hazardous waste exposes communities and the environment to the risk of contamination should there be a spill to water or land as a result of an accident, sabotage or intentional release.

Transportation also can cause an accumulation of incidental leaks that are never monitored or accounted for, even though the negative impacts are very real to the receiving waterway, groundwater, soil, vegetation, and species.

Transportation also emits pollutants to the air that deposit on land, soil, vegetation, or surface water and/or are breathed in by people and animals; this occurs from mobile emissions of carbon and air pollutants from engines as well as off-gassing from container tanks being used for transport.

- The US Environmental Protection Agency (EPA) cites several reports regarding spills and leaks in its seminal report released in 2018 regarding oil and gas wastewater.⁶ EPA reports that spills, leaks, and releases of frack wastewater occur, citing a study that says wastewater is one of the top three materials spilled in fracking activities, including during transportation of wastewater. EPA documents that these releases have negative impacts on water quality and aquatic life; the harm can persist for years after a spill. It has reported that “health effects associated with chronic oral exposure to these chemicals include carcinogenicity, neurotoxicity, immune system effects, changes in body weight, changes in blood chemistry, liver and kidney toxicity, and reproductive and developmental toxicity.” EPA also states that studies show that the likelihood of spills increase as the volume of wastewater and number of trips increase. It is highly likely that at least some of these chemicals will

⁶ 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.

leak, spill, or migrate into water supplies during transport and handling at a processing facility.⁷

- As was stated by the Philadelphia Water Department (PWD) in their comment to PA DEP regarding the application by Elcon to construct and operate a hazardous waste processing facility in Falls Township, Bucks County, PA on the Delaware River, there is a substantial risk of drinking water contamination from release of hazardous waste during transport “The Elcon facility will be attracting regional hazardous waste via railways and highways into one of the most densely populated areas on the East Coast.”⁸ The PWD expressed concern about the siting of a hazardous waste facility on the river: “The siting of the proposed Elcon facility in a navigable waterway, allows for the potential transport of hazardous waste on the Delaware River.”⁹

PWD cautioned PADEP about the release of hazardous waste in transport in the vicinity of urban areas where large numbers of people draw their water supply: “In light of the extensive drinking water supply contamination in West Virginia caused by a chemical storage facility leak, Philadelphia Water would like PADEP to consider the precautionary principle when reviewing the Phase I Siting Permit for the proposed Elcon facility. The proposed facility location is within a twenty mile radius of large urban areas in both Pennsylvania and New Jersey that use the Delaware River as a drinking water supply. The proposed location along a tidal freshwater drinking water supply amplifies the consequence of any accidental release of hazardous waste, given a chemical plume takes many days to flow past the southern-most drinking water intake located in Philadelphia.”¹⁰

⁷ From EPA report “Detailed Study of the Centralized Waste Treatment Point Source Category for Facilities Managing Oil and Gas Extraction Wastes”, 2018: “Another pathway for environmental releases of pollutants from disposal of O&G wastewater at CWTs is the potential for spills of wastewater during transportation from O&G wells or at treatment facilities. Spills of untreated wastewaters can negatively impact water quality and aquatic life, and those impacts can persist in the environment for years. Flowback water spills in the Marcellus Shale region have been shown to negatively impact aquatic life including fish and macroinvertebrates (Grant et al., 2016). Impacts from reported O&G wastewater spills in North Dakota persisted for up to four years after the spill events and included elevated TDS, contaminants (including selenium, lead, and ammonia), and accumulation of radium in soil and sediment (Lauer et al., 2016).

The likelihood of spills during transportation increases as the volume of wastewater and number of trips increases (Belcher and Resnikoff, 2013; Rahm et al., 2013; Hansen, 2014). Maloney et al. (2017) studied accidental spills in Pennsylvania, New Mexico, Colorado, and North Dakota and determined that wastewater is one of the top three materials spilled in HF-related activities.” (p. 9-8)

⁸ <https://water.phila.gov/pool/files/elcon-falls-twp-permit-comments.pdf>

⁹ *Ibid.*

¹⁰ *Ibid.*

Another consideration regarding the import of wastewater and its transportation footprint into the watershed is the potential for the use of pipelines to carry the wastewater into and/or out of the watershed and the myriad adverse impacts that would result. DRBC has not taken full jurisdiction of pipeline projects in its review of such projects under current regulations, despite the public's insistence that they must.

Commissioners, listen to the EPA, to technical experts, and the Philadelphia Water Department - don't allow increased transportation of wastewater produced by fracking into and within the Delaware River Watershed. The pathways of pollution to our water, air, soil, food, and the species that live here will multiply if you open this door.

Commissioners, your public input process shuts people out. Anyone who wants to comment should get the chance. Provide a public participation process that works for everyone. And one more thing, Full Frack Ban Now!

6. Storage of wastewater produced by fracking risks intolerable pollution

The storage of wastewater produced by fracking is not prohibited by the DRBC's draft regulations. Since the wastewater is not being banned for importation to the Basin, storage is a likely non-discharge activity that can occur. This very dangerous activity will expose people and the environment to toxic materials without oversight or regulation by DRBC.

EPA has found that some chemicals used in drilling and fracking have serious health risks; these chemicals make their way into the wastewater that is produced by the fracked well. A look by EPA at 126 of the chemicals proposed for use in fracking resulted in their expressing health concerns about 109. Regardless, EPA approved 62 of them for fracking and drilling oil and gas wells. The health effects noted by EPA include "irritation to the eye, skin, and mucous membranes," kidney toxicity, liver toxicity, neurotoxicity, and developmental toxicity.¹¹

Scientific reports confirm that pollution from fracking wastewater can contain pollutants that will volatilize to the air. Air pollutants are released during at least 15

¹¹ Tanja Srebrotnjak and Miriam Rotkin-Ellman, Natural Resources Defense Council, *Fracking Fumes: Air Pollution from Hydraulic Fracturing Threatens Public Health and Communities*, December 2014.

different parts of the oil and gas development process.¹² Many of the chemicals used in fracking are known air pollutants, and wastewater produced from fracking operations includes volatile compounds that can evaporate into the air, and have been linked to human health problems.¹³

Additionally, there are dangerous constituents in wastewater produced by fracking that are not required to be tested for. New York's 2009 DSGEIS identified 154 of these dangerous parameters in Marcellus shale wastewater.¹⁴ Many are hazardous, some have known harmful health impacts, and some are carcinogenic.

Marcellus Shale is known to be highly radioactive. The radioactivity stays with the produced wastewater that would be stored in the watershed. The half-life of radium 226 is 1600 years and it is known to accumulate in sediments if released to a waterway. Radioactive concentrations in the Marcellus Shale formation are at concentrations 20 to 25 times background, making shale gas wastewater extremely radioactive.¹⁵

PADEP's report on the radioactivity of fracking waste, states that combined Radium-226 and 228 measures as high as 28,500 picocuries per liter.¹⁶ This is the highest reported level of tested shale gas plays in the U.S. Additionally, each time fracking wastewater is "recycled" or reused, the radium is concentrated, resulting in TENORM, or Technically Enhanced Naturally Occurring Radioactive Materials.¹⁷ The wastewater from Marcellus Shale formations is highly radioactive and the levels of radioactivity could be enhanced in the wastewater that would be sent for storage to the Delaware River watershed due to the common practice in Pennsylvania to reuse frack fluids in multiple frack jobs, created TENORM, which can be even more dangerous than radium-226.

¹² "Keystone Secrets: Records Show Widespread Use of Secret Fracking Chemicals Is a Looming Risk for Delaware River Basin, Pennsylvania Communities", Dusty Horwitt, Partnership for Policy Integrity (PFPI), September 11, 2018.

¹³ U.S. House of Representatives, Committee on Energy and Commerce, *Chemicals Used in Hydraulic Fracturing*, April 2011.

¹⁴ NYSDEC Draft Supplemental Generic Environmental Impact Statement on the Oil, Gas, and Solution Mining Regulatory Program (DSGEIS), 2009, Tables 5-8 and 5-9, p. 5-109.

¹⁵ US General Accountability Office, *Information on the Quantity, Quality, and Management of Water Produced During Oil and Gas Production*, GAO-12-56, January 2012.

¹⁶ Pennsylvania DEP, Technologically Enhanced Naturally Occurring Radioactivity Materials Study Report, 2016. <http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4238>

¹⁷ Radioactive Waste Management Associates, "Comments on Marcellus Shale Development", Marvin Resnikoff, Ph.D., October 2011.

Due to the exemption of oil and gas activities from the U.S. Resource Conservation and Recovery Act Subtitle C standards, the wastewater is not classified as hazardous and is not required to be handled or stored as hazardous materials despite the many wastewater constituents that do have hazardous properties. Even if certain safe storage protocols are followed, without knowing all the components of the wastewater, proper protocols can't be developed and implemented. Some of the substances in fracking wastewater are not even known by the well operator or perhaps even by the relevant state agency such as PA Department of Environmental Protection (PADEP). A 2018 report "Keystone Secrets" documents that drilling companies have extensively used exemptions in Pennsylvania rules that allow companies to withhold chemical identities as trade secrets.¹⁸ This summer it was discovered, for instance, that highly toxic PFAS, also known as "forever chemicals" were used to frack wells in Pennsylvania without any public disclosure.¹⁹

This secrecy is not a new problem. Drilling companies injected secret fracking chemicals 13,632 times into 2,515 "unconventional" wells in Pennsylvania between 2013 and 2017, primarily in Marcellus and Utica shale formations.²⁰

It is important to point out that without DRBC permitting, the regulation of storage facilities lies with the state. In Pennsylvania, General Permit WMGR123²¹, 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 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 be kept on site for a year or more or for the life of the General Permit, defying the definition of "temporary". Impoundments that hold the stored fluids use plastic liners that may not have the required strength to hold these potent fluids, which can be concentrated residuals of reused wastewater from several frack jobs.

¹⁸ "Keystone Secrets: Records Show Widespread Use of Secret Fracking Chemicals Is a Looming Risk for Delaware River Basin, Pennsylvania Communities", Dusty Horwitt, Partnership for Policy Integrity (PFPI), September 11, 2018.

¹⁹ Horwitt, Dusty, "Fracking with Forever Chemicals", Physicians for Social Responsibility July 2021.

²⁰ "Keystone Secrets: Records Show Widespread Use of Secret Fracking Chemicals Is a Looming Risk for Delaware River Basin, Pennsylvania Communities", Dusty Horwitt, Partnership for Policy Integrity (PFPI), September 11, 2018.

²¹ https://files.dep.state.pa.us/Waste/Bureau%20of%20Waste%20Management/WasteMgtPortalFiles/SolidWaste/Residual_Waste/GP/GENERAL_PERMIT_WMGR123_FINAL_1_4_21.pdf

There is no requirement limiting the size or capacity of these units, which are being built in enormous sizes today, increasing the potential adverse impacts should a unit break. There is no requirement to prevent all vapors and emissions from the storage vessels to be treated and filtered to remove all contaminants, including methane, except to reference current DEP air regulations that address fugitive emissions of a select group if certain volume thresholds are met.

Additionally, less frequent and fewer parameters of the fluids are tested for under the 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. These are only some of the problems with the lax regulations that govern storage of fracking wastewater in Pennsylvania that would endanger the Delaware River Watershed.

The obvious threat with storage of this highly toxic material is that leaks, emissions and spills from containers will occur and transloading into and out of containers increases the opportunity for a release into the environment of wastewater that could contain concentrated toxic substances that threaten public health and the environment. Why would DRBC risk the release of toxic and radioactive pollutants into the watershed by not banning storage of this waste?

Commissioners, a complete and categorical ban on the import of fracking wastewater and its subsequent storage, processing, and disposal here is the only way to prevent fracking wastewater pollution in the Watershed.

Commissioners, your public input process shuts people out. Anyone who wants to comment should get the chance. Provide a public participation process that works for everyone. And one more thing, Full Frack Ban Now!

7. Water for use in fracking can be exported under the draft regulations

The export of water for use in fracking outside of the watershed inflicts irreparable harm in multiple ways: It deprives the springs, tributaries, and mainstem Delaware River of critical flows and quality; it induces fracking where it may not occur due to water shortages in overdrawn streams; it induces more fracking, which damages public health and the environment and increases the emissions of the powerful greenhouse gas methane, worsening the climate crisis.

The use of water for fracking is “depletive” - all of the water is lost – by being consumed by the fracked well since most of the water injected for fracking is not recovered, but is locked underground, and is not returned to the source, translating into a rare complete loss of the sequestered water to the natural hydrologic cycle. The water is also depleted by being irreparably polluted. The relatively small amount of water that comes back up is contaminated, mingled with ancient sea deposits in the deep well bores that contain myriad naturally occurring pollutants such as radioactive elements, heavy metals, and extremely salty brines. What was water is now a hazardous chemical mix of fracking fluids, deep geology pollutants, and proppants, such as sand, that are used in fracking – it is a waste product that can never be completely cleaned of contamination. This consumption of water depletes the surface waterway and/or groundwater from where it is taken and produces toxic, radioactive waste. There is no mitigation that can undo the depletion.

Fracking uses enormous volumes of water, approximately 5-10 million gallons per well, and increases of 10-20 million gallons are becoming more frequent. Technology used today can lengthen horizontal well bores up to 4 miles.²² This means more water is needed to flood the well bores with fracking water. Dr. Ted Auch of Fracktracker Alliance reports this increases the amount of water used per fracked well to 9.7 mg on average. In the Marcellus Shale, “super wells” have used between 10 and 20 million gallons. These huge volumes mean that the industry is seeking more water in watersheds they have been depleting for years and the Delaware River Watershed is untapped by them.

Another consideration regarding the export of water is the potential for the use of pipelines to carry the water out of the watershed and the myriad adverse impacts that would result. DRBC has not taken full jurisdiction of pipeline projects in its review of such projects under current regulations, despite the public’s insistence that they must.

What would be the benefit to the Delaware River watershed and the up to 17 million people who rely on the Delaware for water every day, to export our water at a total loss? Water supplies contribute 3.82 billion dollars in annual value to the regional economy and water quality brings \$2.5M in annual economic benefit to the Basin, according to a study out of the University of Delaware.²³ When water is depleted, it has real economic impacts for the source watershed that has

²² <http://www.post-gazette.com/powersource/companies/2018/01/15/These-days-oil-and-gas-companies-are-super-sizing-their-well-pads/stories/201801140023>

²³ Gerald J. Kauffman, Socioeconomic Value of the Delaware River Basin in Delaware, New Jersey, New York, and Pennsylvania”, University of Delaware, 10.11.11, p. 26.

lost the value of that water. And the loss to the watershed's communities, habitats, ecosystems, and to the Delaware Wild and Scenic River and its aesthetic and recreational values, is permanent and long-lived, impacting us today and future generations as well. Only 1% of the earth's water is drinkable, how we manage water will define our future and the future of the planet.

Commissioners, it is your responsibility to safeguard the watershed's irreplaceable water and the only way to do this is to completely ban the export of water for fracking.

Commissioners, your public input process shuts people out. Anyone who wants to comment should get the chance. Provide a public participation process that works for everyone. And one more thing, Full Frack Ban Now!

8. Climate impacts of the implementation of DRBC draft regulations

The import of fracking wastewater into the watershed gives the industry two BIG things it needs to continue their fracking frenzy in the region, particularly in the Marcellus shale of Pennsylvania. It gives them another location to get rid of the waste that is choking the fracking industry now and it gives them a source of desperately needed water to which the industry has not had access due to the long standing moratorium on water withdrawals for fracking in the Basin. What does this mean? It means more fracking, which damages public health and the environment and also increases the emissions of the powerful greenhouse gas methane.

The development of natural gas digs the planet further into a hole, with methane exacerbating the climate crisis. 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. That's more potent than the carbon emissions from coal or oil, cradle to grave. DRBC should not be taking action that props up the drilling industry and its unmitigatable greenhouse gas emissions, especially at a time when scientists and global leaders are warning that we must REDUCE our greenhouse gases by 50% by 2030 to fight the climate crisis.

Commissioners, you know that the Delaware River Watershed is already experiencing the effects of climate change and is one of the most impacted

regions in the nation due to rapid river level rise, sinking land mass, and the onslaught of storm surges with violent weather patterns. In the absence of adaptation, more intense and frequent extreme sea level events, together with trends in coastal development, will increase expected annual flood damages by 2-3 orders of magnitude by 2100.²⁴

We can't absorb more flooding of communities, we can't lose more wetlands, habitats and species. We must do our part here in the Delaware River Watershed to curb the climate crisis by preventing greenhouse gas emissions wherever we can. DRBC must be part of the solution, not the problem.

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9. "Beneficial" reuse of waste threatens air, water, human and nonhuman communities, and the larger environment

Beneficial reuse of waste is encouraged at the federal and state level. Many beneficial reuses of wastewater do not involve a discharge to water or land. Pennsylvania DEP issued a guidance manual regarding the reuse of wastewater that set the foundation for many practices in use now. Reuses allowed include reuse water for industrial processes, cement manufacture and other construction activities, evaporative cooling water, and boiler feed water, and processing aggregate. Stated in the guidance manual: "Development in a Special Protection Watershed requires the evaluation of non-discharge alternatives for wastewater treatment. Reuse of treated wastewater can provide these non-discharge alternatives, while still allowing development to occur."²⁵ This describes the loophole in the proposed DRBC regulations – that wastewater produced by fracking can be imported into the watershed for use in various ways, posing pollution threats, as long as it is not discharged.

New Jersey issued a guidance manual in 2005 with its program "Reclaimed Water for Beneficial Reuse", which began in 1999 but has greatly expanded. The

²⁴ IPCC (2019). The Ocean and Cryosphere in a Changing Climate. Intergovernmental Panel on Climate Change. Retrieved from https://report.ipcc.ch/srocc/pdf/SROCC_FinalDraft_FullReport.pdf at 6-3.

²⁵ PA Department of Environmental Protection, *Reuse of Treated Wastewater Guidance Manual*, #385-2188-002, 2012, PDF p. 9

<http://www.depgreenport.state.pa.us/elibrary/PDFProvider.ashx?action=PDFStream&docID=7415&chksu m=&revision=0&docName=385-2188-002.pdf&nativeExt=pdf&PromptToSave=False&Size=426042&ViewerMode=2&overlay=0>

manual strongly encourages that reclaimed or reused water should be the preferred source of water for projects, particularly for non-potable uses.²⁶ Closed loop systems that may not require a discharge include non-contact cooling water and boiler makeup water. Refineries and municipal utility authorities use reclaimed wastewater as non-contact cooling water.

USEPA includes “produced water from natural resource extraction activities” as one of the acceptable sources of wastewater that can be “beneficially reused”.²⁷ The agency adds as acceptable the reuse of this wastewater in “process water for power plants, refineries, mills, and factories”.²⁸ USEPA states that since most states maintain primary regulatory authority in allocating and developing water resources, decisions about reuse are not made by the federal government.²⁹

It is important to recognize that DRBC is abdicating a key function of its mission to manage the water resources of the Delaware River Watershed by not prohibiting the import of fracking wastewater, which would only be regulated by a patchwork of state programs regarding “beneficial reuse”. DRBC will have no control over non-discharge reuse of fracking wastewater despite the pollution threat from its toxic and radioactive properties.

Commissioners, what is labeled as “beneficial use” by government agencies cannot be accepted as safe until the devil in the details is examined. Follow the science on what is in these materials and what the real-world short and long term and cumulative effects are of the activities allowed under these beneficial use projects. Prohibiting the import of fracking wastewater categorically is the most efficient, economical, and beneficial way to prevent the pollution from fracking wastewater.

Commissioners, your public input process shuts people out. Anyone who wants to comment should get the chance. Provide a public participation process that works for everyone. And one more thing, Full Frack Ban Now!

10. Discharges are not the only way that pollution enters our environment and exposes us to harm - stormwater runoff can carry pollution into our water, spreading far into the environment and stretching impacts way into the future

²⁶ <https://www.nj.gov/dep/dwq/techmans/reuseman.pdf>

²⁷ <https://www.epa.gov/waterreuse/basic-information-about-water-reuse>

²⁸ *Ibid.*

²⁹ <https://www.epa.gov/waterreuse/basic-information-about-water-reuse#uses>

Stormwater runoff can carry pollution from sites with no direct discharge that do not require DRBC review or oversight. This is a pathway of pollution that will be opened wide if DRBC allows frack wastewater to be imported here for storage, processing, or reuse in other activities. The transfer of pollutants contained in wastewater produced by fracking to the environment can occur through indirect discharges that do not trigger the requirement for a National Pollution Discharge Elimination System (NPDES) permit. Stormwater runoff can carry into surface water pollutants that are deposited by air on land and/or vegetation and by spills and leaks on to land. As stated in a report examining the development and operating practices of oil and gas operators, a stormwater expert states:

“Contamination of a surface water source may occur due to activity at a wellhead, but may also occur due to activity related to fluid storage and transportation that is not in proximity to a wellhead. Surface source waters can also be adversely affected by other industry related activities, such as stormwater and erosion and sediment issues related to construction”.³⁰

“Comprehensive long-term water quality monitoring of surface waters, including both chemical and biological monitoring at locations downstream of all gas development activities, is required to assure that water quality is maintained.”³¹

The construction, operation, and maintenance of a fracking wastewater storage project or processing facility that has no direct discharge to water or land, can still expose surface and groundwater, air, fish and wildlife, and people to fracking-related pollution. However, without DRBC permitting that involves a direct discharge, the project may not be reviewed or monitored by DRBC. It is important to realize that if a project is not under DRBC jurisdiction, the regulations of the state where the project is located will apply. A major flaw in current DRBC policy and regulations is that the states each have their own stormwater regulations, implementing the NPDES 2 nonpoint source pollution prevention program based on their own interpretations of the federal Clean Water Act. There is no unified stormwater best management practice manual or regulatory regime at the DRBC level that would ensure strict adherence to, for instance, the Special Protection Waters program mandate of “no measurable change” in the outstanding water quality of the anti-degradation waters of the Delaware River Basin.

³⁰ “Unsafe & Unsustainable: *Experts Review the Center for Sustainable Shale Development’s Performance Standards for Shale Gas Development*”, Michele Adams, P.E., Prepared for the Delaware Riverkeeper Network, 2014, p.14.

³¹ *Ibid.*

As an illustration of this disparity in environmental protection pertaining to stormwater management, Pennsylvania does not require an individual NPDES permit for gas well sites. While the DRBC's draft regulations do not apply to gas extraction wells, which is banned in the watershed, the lax regulatory approach to stormwater runoff from oil and gas sites speaks volumes about the Commonwealth's approach to fracking-related activities. This is what will rule should fracking wastewater and its stormwater runoff pollution potential be allowed by the import and handling of this waste here.

Compounding the difficulties associated with handling highly toxic and radioactive wastewater at a storage, processing, or reuse site is the problem of not knowing all the constituents of the wastewater. Not only does this make effectively handling of an emergency spill extremely challenging, it also means that specific monitoring requirements and testing criteria cannot be established on a proactive basis in Pollution Prevention Plans to catch and identify pollutants. You cannot find what you cannot measure. The result is that pollution may escape detection and spread into water and the surrounding environment, impacting people, animals and ecosystems on both a short term and long range time frame.

Commissioners, stormwater runoff can transfer pollution from fracking wastewater from a closed loop system, a storage site, or other handling facility that was supposed to be a no-discharge project into a source of contamination. This cannot be tolerated. You banned fracking within the watershed, you must now ban the pollution produced by fracking by prohibiting its toxic and radioactive wastewater from entering the watershed where it can be used, reused, processed, stored, or disposed.

Commissioners, your public input process shuts people out. Anyone who wants to comment should get the chance. Provide a public participation process that works for everyone. And one more thing, Full Frack Ban Now!

Shared for public use by the Delaware River Frack Ban Coalition Organizing Committee: Berks Gas Truth, Catskill Mountainkeeper, Clean Water Action, Damascus Citizens for Sustainability, Delaware Riverkeeper Network, Environment New Jersey, Food & Water Watch, Natural Resources Defense Council, Sierra Club, League of Women Voters of Delaware.

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