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U.S. Environmental Protection Agency  
Office of Water  
1200 Pennsylvania Avenue NW  
Washington, DC 20460  
*Submitted via regulations.gov*

November 9, 2018

Re: Docket ID No. EPA-HQ-OW-2018-0420

The [#] undersigned public interest organizations offer the following comments on “possible approaches to updating the National Pollutant Discharge Elimination System (NPDES) regulations related to the management of peak wet weather flows at Publicly Owned Treatment Works (POTWs) treatment plants serving separate sanitary sewer collection systems,” or in other words, EPA’s forthcoming sewage blending rule.[[1]](#footnote-1)

Blending, a practice in which wastewater treatment plants divert waste streams around secondary treatment and discharge partially-treated sewage during rain events, has the potential to create significant public health risks. Moreover, it is a practice that only becomes “necessary” when wastewater utilities fail to adequately maintain their infrastructure, leaving them struggling to operate crumbling collection systems and overwhelmed treatment facilities. Despite some utilities’ insistence that blending is an expedient answer to their infrastructure problems, ongoing underinvestment in wastewater systems is not an acceptable justification for weakening environmental safeguards and threatening public health.

While we recognize EPA’s desire to establish regulatory certainty on this issue, the agency should not move forward with a rule that formally authorizes blending unless and until it provides satisfactory answers to the serious outstanding questions discussed in Section I of these comments below. In the alternative, if EPA proceeds with a rule authorizing blending notwithstanding our strong objections and concerns, it must establish strong regulatory and permitting safeguards to protect public health.

As an initial matter, we note that the EPA stakeholder outreach process on this rulemaking has been heavily skewed toward the perspectives and goals of the wastewater utility industry, with few public health or environmental advocates present at the table. Also lacking was the input of independent wastewater engineers who may have a perspective different from that of the utility industry that would be less predisposed to promote blending. Stakeholder discussions have emphasized potential operational issues and the costs that industry would bear if it were not permitted to engage in blending, with little recognition of the costs that the discharge of partially-treated wastewater imposes on exposed residents, wildlife, and ecosystems, or the benefits that better-functioning collection and treatment systems would create. Moving forward, we urge EPA to increase its efforts to raise awareness of this rulemaking among the general public and especially frontline communities most affected by these sewage exposures. A broader and more diverse set of voices must be allowed and encouraged to provide input on this topic.

1. EPA Should Not Authorize Blending at This Time Due to Serious, Unanswered Questions About Its Safety

A common theme in stakeholder discussions has been the lack of complete or even adequate data about many aspects of blending: how many facilities do it, what the consequences are to water quality and human health, what the environmental justice impacts are on communities affected by blended discharges, and what can be done to avoid blending or reduce the risks it poses, among other questions. These information gaps are important, especially given that the limited information available shows that the discharge of blended sewage contains higher levels of pathogens that are dangerous to human health. In the face of these questions, moving forward now with a rule that formally authorizes blending would be an arbitrary and capricious action, unsupported by substantial evidence, in violation of the principles that govern administrative decision-making.[[2]](#footnote-2)

*Public Health Impacts*

As EPA itself stated in 2005, “the Agency and stakeholders have been concerned for some time that peak wet weather flow diversions [i.e., blending] could have adverse environmental or public health impacts because of the higher expected pollutant load of diverted flows.”[[3]](#footnote-3)

No comprehensive analyses are available about the public health impacts of discharging blended wastewater.[[4]](#footnote-4) However, experts generally agree that the greatest health risks associated with blending come from pathogens.[[5]](#footnote-5) Pathogens are disease-producing microorganisms that are naturally present in all human wastes. They consist of bacteria, viruses, protozoa, and parasitic worms, and can cause illnesses including cholera, gastroenteritis, respiratory infections, giardiasis, cryptosporidiosis, and dysentery. Humans may come in contact with pathogens either by drinking contaminated water or through swimming, fishing, or other contact activities.[[6]](#footnote-6) Eating fish and shellfish that have been exposed to pathogens can also pose health risks to consumers.[[7]](#footnote-7)

While data on blending and pathogens is limited, the information that is available shows that blended sewage discharges contain more pathogens than fully treated sewage, and therefore present greater risk to human health. Full secondary treatment using biological processes is uniquely effective at removing bacteria, viruses, and other pathogens from wastewater.[[8]](#footnote-8) Although primary treatment plus disinfection successfully removes some bacteria, it is not particularly effective at removing viruses or parasites and requires exceptionally high doses of chlorine to remove bacteria from effluent that has not received secondary treatment. Conventional secondary treatment processes, on the other hand, can remove up to 99% of viruses, which are known to cause a significant percentage of all gastrointestinal illnesses, and 99% of bacteria and parasites.[[9]](#footnote-9) Two Canadian studies reported that primary wastewater treatment removes on average only 76% and 27%, respectively, of *Cryptosporidium* and *Giardia*, parasites associated with waterborne illness, and that secondary treatment was needed to achieve 90% or greater reduction of both.[[10]](#footnote-10)

When wastewater foregoes full secondary treatment, as it does when treatment plants engage in blending, pathogen reduction is far less successful. A 2010 study by EPA contractor Tetra Tech found that, during blending, treatment plants are only able to remove 71% of *Cryptosporidium* parasites and 40% to 88% of *Giardia* parasites, while discharging very high levels of fecal coliform and Enterococcus bacteria.[[11]](#footnote-11) Another study found that risk exposure to adenovirus and *Giardia* for people recreating in waters receiving blended sewage flows were greater by about an order of magnitude (10-fold) than if the blended flows had received full secondary treatment.[[12]](#footnote-12)

As a result, there is significant reason to believe that discharging blended sewage that foregoes full secondary treatment could put public health at risk. The study results described above are inconsistent with statements some operators made at recent stakeholder discussions that effluent values typically are not higher for pathogens during blending. At a minimum, the studies highlight the need for more comprehensive data for analysis. It would be irresponsible for EPA to move ahead with a wholesale authorization of blending without knowing the full picture of the potential public health impacts.

*Other Environmental Impacts*

The discharge of blended sewage into the environment can pose significant ecological concerns beyond the public health concerns discussed above. Because of the substantially lower removal rates of primary versus secondary treatment for many of the pollutants in sewage, routine bypassing of secondary treatment processes could have damaging long term effects on receiving waters. One study found that blended wastewater contained greater concentrations of total suspended solids (TSS) and carbonaceous biochemical oxygen demand (cBOD5) than non-blended treated effluent.[[13]](#footnote-13) EPA should gather more information on the environmental impacts of blending with regard to all potential pollutants of concern in wastewater before it moves forward with a rule authorizing this practice.

*Effectiveness of Auxiliary Treatment Technologies*

Information is also lacking on the effectiveness of auxiliary treatment technologies that might be used at treatment plants during blending events. Many facilities – though it is not clear how many – channel wastewater that does not receive secondary treatment through an alternative treatment system before recombining it with fully treated waste and disinfecting it. However, there are no epidemiological studies that compare the health risks of blended flow with and without auxiliary treatment.[[14]](#footnote-14) It would be imprudent for EPA to establish a regulatory program for wastewater blending without understanding the efficacy of the treatment technologies the regulated industry might use in lieu of full secondary treatment.

*Effectiveness and Side Effects of Disinfection*

Blended wastewater is typically disinfected before discharge to surface waters. However, disinfection is not the same as sterilization; it does not kill all pathogens.[[15]](#footnote-15) As a public health expert from Johns Hopkins University explained at EPA’s October 15, 2018 blending stakeholder roundtable, different disinfectants work differently for different types of pathogens. Disinfection that is designed to reduce bacteria indicators might have variable performance with respect to addressing viruses and protozoa, for example.[[16]](#footnote-16)

EPA has emphasized that it is important for wastewater to be adequately treated prior to disinfection in order for any disinfectant to be effective.[[17]](#footnote-17) Without secondary treatment, disinfection does not work as efficiently, and facilities must use higher-than-usual doses of disinfectants.[[18]](#footnote-18) Not only is the increased use of disinfectants less effective than secondary treatment, it causes a secondary set of health hazards. This is because, when extra doses of chlorine are needed to disinfect waste that has received only primary treatment, the chlorine combines with certain organic matter in the wastewater, creating hazardous chemical compounds such as trihalomethanes. These disinfection by-products are carcinogenic and may increase the risk of cancer in humans.[[19]](#footnote-19) As a result, heavier reliance on chlorine-based disinfection practices could cause serious adverse health effects in anyone whose drinking water source is downstream of a treatment plant discharging blended wastewater.

EPA should not formally authorize blending until it gains a full understanding of the efficacy of different disinfection processes and how they affect public health risks.

*The Precautionary Principle Weighs Against Authorizing Blending*

According to the precautionary principle, it is better to avoid an action or policy that has the plausible potential, based on scientific analysis, to result in negative consequences to the environment or public health, even if the consequences of that activity are not conclusively known – with the burden of proof that it is not harmful falling on those proposing the action. In the context of this rulemaking, the precautionary principle weighs against a wholesale authorization of blending, given the significant questions about its potential impacts. The wastewater utilities urging the widespread adoption of blending have not met their burden of proof in establishing that the practice is safe.

If EPA authorizes blending now, and utilities make investments in treatment systems and technologies that incorporate blending, it will be difficult to change the rules later, even if subsequent information reveals that blending is not safe. There is a reason why decision-makers must consider the evidence and “look before they leap.” It is far more sensible to gather information first, before making significant regulatory decisions, rather than enshrining practices with unknown consequences into law and deferring the analysis of hard evidence until afterward.

Before deciding whether or not to authorize blending, EPA should study, monitor, and assess its impacts in a comprehensive fashion. It would be irresponsible, not to mention arbitrary and capricious, to move forward without all the facts. While EPA performs this information-gathering exercise, it should continue to treat blending as a prohibited bypass in the 43 states that are not affected by the U.S. Court of Appeals for the Eighth Circuit decision in *Iowa League of Cities*.[[20]](#footnote-20)

*Utilities Have Other Options Besides Blending*

Instead of moving ahead with a rule authorizing them to engage in blending, EPA should first require utilities to maximize treatment by reducing excessive I/I, improving programs to minimize and clear blockages, providing storage for sewage during rain events until it can be treated, installing larger pipes to increase capacity, and increasing the maximum treatment capacity available inside the treatment plant. These are feasible engineering alternatives that do not carry the same risks as blending. In addition, existing bypass regulations are still in place that adequately provide the opportunity to bypass when necessary.

EPA itself has recognized that blending is not a true solution to peak flow management and that other approaches are practicable: “EPA anticipates that, over time, the need to undertake peak wet weather flow diversions at POTW treatment plants serving separate sanitary sewer conveyance systems can be eliminated from most systems in a variety of ways, such as by enhancing storage and treatment capacity and reducing sources of peak wet weather flow volume.”[[21]](#footnote-21)

By contrast, if EPA were to authorize blending at all facilities, it would discourage utilities from addressing the problems with their collection systems that give rise to the supposed “need” for blending in the first place. Given that aggressive control of I/I can be a cost-effective as well as environmentally beneficial means of managing peak wet weather flows, this would be a perverse and undesirable incentive.

*Blending Is Not the Best Available Alternative*

In stakeholder discussions, some wastewater industry representatives have claimed that blending is the best available alternative given the problems facing utilities. They argue that discharging blended wastewater is less harmful than allowing damage to the treatment plant, causing sanitary sewer overflows, or triggering basement backups. This is a false narrative. While blending might have marginal benefits over the status quo in some places, that does not mean that it is the *best* option.

Instead, the best option is to address the root cause of excess volume in the collection system, whether it is an under-capacity treatment plant, broken pipes, undersized pipes, inadequately maintained pipes, or infiltration and inflow. Many utilities want to advance the idea that blending is the best approach because it is more expedient than taking comprehensive steps to fix their systems and provide full, effective wastewater treatment. In fact, this problem is largely the result of utilities putting off maintenance and improvements for many years, and they should not be rewarded for their inaction with weakened regulations – which will only further delay necessary system upgrades.

*Blending Does Not Promote Environmental Justice*

Wastewater industry representatives have also claimed that blending promotes environmental justice because it can help avoid sewer overflows, which can disproportionately affect vulnerable communities, including low-income communities and communities of color. As discussed above, this is a false choice, and ignores the fact that sewer overflows are already separately regulated under existing legal regimes.

In fact, blending itself affects frontline environmental justice communities that are often located near treatment plants and overflow points and therefore face a greater risk of exposure to pathogens in blended sewage. It is a core element of EPA’s mission to avoid and eliminate disproportionate impacts to environmental justice communities. According to Executive Order 12898, “[E]ach Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”[[22]](#footnote-22) EPA must therefore conduct an analysis of the potential disproportionate impacts of blending on low-income communities and communities of color before it moves forward with this rulemaking. Ultimately, the way to promote justice for these communities is not to authorize the discharge of partially-treated sewage, but to fix the sewer systems that serve them so that blending is not necessary in the first place.

*Blending Is Not the Answer to Affordability Problems*

Finally, some wastewater industry representatives have claimed that blending is needed to maintain the affordability of sewer services because money spent to fix the underlying problems with the collection system will cause low-income customers’ rates to rise. This, too, is a false choice. Ample policy measures exist that can protect the affordability of service for low-income customers while utilities invest in improvements to their systems, including more equitable pricing structures and low-income customer assistance programs. Affordability must never be used as a scapegoat or excuse for failing to make the infrastructure improvements necessary for our communities to have safe access to clean, healthy water.

1. If EPA Authorizes Blending, It Must Put Sufficient Safeguards in Place to Protect Public Health

As we explained in Section I of these comments, we believe it would be premature and dangerous for EPA to move forward with a rule that authorizes blending at all wastewater treatment facilities. If, however, EPA does decide to proceed with such a rule over our objections, it must adequately guard against all reasonably anticipated public health impacts from blending.

At the outset, the rule should clearly define what types of systems and practices fall under the definition of “blending,” so that regulated industry can have clarity and certainty about whether the rules apply to them. The rule should also require facilities to notify EPA if they intend to engage in blending. This notification requirement would be consistent with existing rules that require treatment facilities to notify EPA about other kinds of special circumstances, such as the introduction of pollutants to the treatment plant from an indirect discharger.[[23]](#footnote-23) Facilities need to notify EPA that they intend to blend so that appropriate conditions can be written into their NPDES permits. In turn, then, any blending rule must amend the NPDES regulations for wastewater treatment facilities to impose additional conditions on permittees that blend.

*Health-Based Effluent Limitations for Pathogens*

Critically, the rules must provide that a NPDES permit may only authorize blending if the permit contains health-based effluent limitations for pathogens. Currently, many wastewater treatment plants’ NPDES permits do not contain any effluent limitations for pathogens. While exact figures are not available, the last time EPA proposed to authorize blending in 2003, the agency stated that only one-quarter to one-half of major POTWs were required to meet an effluent limitation for bacteria, and some of those limits did not apply all of the time.[[24]](#footnote-24) Yet, as discussed above, pathogens are the most important pollutant of concern in the context of sewage blending. Permit limits on other conventional pollutants, like TSS and BOD, are not adequate substitutes for pathogen effluent limitations because they are related to the treatment process, not public health, and questions exist about whether they can be correlated with pathogens at all.[[25]](#footnote-25)

Even for those facilities whose permits do contain limits on pathogens, those limits are often not expressed in a way that adequately addresses the public health threat posed by pathogens. For example, many permits contain long-term pathogen limits (e.g., expressed as a monthly geometric mean or 30-day average), which are not sufficiently protective because risks posed by pathogens tend to be acute (short-term), not chronic. Many permits also contain pathogen limits that are based on the presence of indicator bacteria, but these are not good indicators for assessing the risk of other pathogens, like viruses.[[26]](#footnote-26)

The lack of appropriate effluent limitations is a serious problem in the blending context because members of the public tend to assume that if permit limits are being met, then all pollutants of concern are being adequately removed, and therefore contact with the wastewater poses no danger. (This assumption also seems to be shared by some members of the wastewater utility industry, who voiced it during stakeholder events over the past month.) However, this assumption does not hold true in the blending context, where permit limits on constituents like sediment and nutrients bear little relationship to the true health risk posed by the discharge. As a result, compliance with permit requirements not related to pathogens, or not expressed in a way that guards against the acute risk of pathogen exposure, can create a false sense of security.[[27]](#footnote-27)

As a result, if EPA decides – over our objections – to authorize blending, it must require NPDES permits for facilities engaging in blending to contain strict effluent limitations for pathogens that meaningfully and comprehensively address the acute, short-term risk of exposure to all relevant pathogens. Under the Clean Water Act, water quality-based effluent limitations more stringent than technology-based limits are required as necessary to attain local water quality standards,[[28]](#footnote-28) even when states have not adopted numeric criteria for the relevant pollutant of concern.[[29]](#footnote-29)

The adoption of appropriate water quality standards for a permittee’s receiving water body is therefore critical. When the necessary conditions are not met for a treatment plant’s NPDES permit to contain adequately protective water quality-based pathogen limits—for example, if its receiving water is not subject to EPA-approved water quality standards that relate to pathogens—then that facility should not be allowed to engage in blending.

*Minimizing the Frequency of Blending*

Because the impacts of blending are still not fully understood, the practice should not be allowed at all; but if it is, it should be considered a last resort that is kept to an absolute bare-minimum frequency, and certainly not authorized during every rain event. As EPA itself stated in 2005, “EPA does not expect diversions [i.e., blending] at POTW treatment plants serving separate sanitary sewer conveyance systems to be used for routine rain events.”[[30]](#footnote-30) Allowing treatment plants to blend during any sized rain event when the capacity of the secondary treatment unit is exceeded would encourage under-sizing of facilities and inadequate maintenance. Thus, any NPDES permit that includes blending must include appropriate requirements for limiting and documenting the frequency of blending.

During stakeholder conversations, utilities have emphasized that circumstances are different at each facility, making it impractical for EPA to establish a one-size-fits-all storm event size that would trigger a facility’s authorization to begin blending. In light of this diversity among permittees, EPA should establish a generally applicable standard in the NPDES regulations directing the permit writer for each individual facility to determine the appropriate storm event size, and/or the excess flow volume reasonably expected to be generated from such a storm event, that can justify blending while ensuring that the practice is used as little as possible, and only when needed. This determination should be based on the design flow volume of each component system of the treatment plant, and should be updated when the operator implements the system capacity upgrades that must also be required (as discussed below). The permit writer should be required to take climate change into account, as some regions’ rain patterns are projected to shift in the future, making extreme rain events – and stormwater infiltration into sewer systems – more common.

*Collection System Maintenance and Repair*

EPA should establish in the NPDES regulations that any permit authorizing blending must require the permittee to undertake a rigorous collection system capacity, management, operation, and maintenance (CMOM) program to address inflow and infiltration, along with any other known problems, in the long-term. A key element of this CMOM requirement is for the permittee to provide for adequate capacity during both base and peak flows.

Given the risks it poses, blending is at best a short-term solution to a utility’s collection system problems that should not be permitted to occur indefinitely (though, as noted above, we believe it should not be permitted at all). According to EPA, the agency “strongly discourages reliance on peak wet weather flow diversions around secondary treatment units [i.e., blending] as a long-term wet weather management approach at a POTW treatment plant serving separate sanitary sewer conveyance systems and that such diversions should be minimized to the maximum extent feasible.”[[31]](#footnote-31) A national CMOM requirement would help to meet the goal of minimizing and eventually eliminating the need for a facility to use blending at all.

*Monitoring*

EPA should require any facility engaging in blending to conduct extensive monitoring before, during, and after blending events. These requirements should include end-of-pipe monitoring, to determine compliance with permit limits and characterize the performance of the treatment plant; receiving water monitoring, to evaluate water quality and provide a realistic view of exposure for all nearby populations, especially environmental justice communities; and operational data, to determine the efficiency of treatment systems and processes.

Not only will comprehensive monitoring ensure that individual permittees comply with permit terms and track attainment of water quality standards to keep recreational users safe, it will also help to fill some of the broader information gaps described above in Section I.

*Public Notification*

Permittees should be required to notify the public, especially frontline communities most affected by sewage exposure, when blending is occurring – in addition to public health officials, downstream drinking water plants, and downstream shellfish producers and harvesters. Potential methods of public notification could include phone hotlines, social media, a website that discloses blending activity, door knocking in at-risk neighborhoods, and/or signs posted at public access points to recreational sites during discharges of blended wastewater. People have a right to know when discharges are occurring that contain higher-than-usual levels of pathogens that could affect their health.

*Establishing Conditions on Pollution Discharges Falls Squarely Within EPA’s Authority*

In its *Iowa League of Cities* decision, the Eighth Circuit ruled that EPA may not “impose[] secondary treatment regulations on flows within facilities.”[[32]](#footnote-32) However, that does not mean that EPA may not establish other conditions that certain types of facilities – such as those that engage in blending – must meet. The Clean Water Act states that the agency “shall prescribe conditions for [NPDES] permits to assure compliance” with the broad requirements of the Act.[[33]](#footnote-33) All of the safeguards described above are necessary to ensure that pollution discharges from wastewater treatment plants that blend meet all applicable legal requirements and protect public health. They also steer clear of the Eighth Circuit’s prohibition on imposing secondary treatment standards on internal waste streams.

In its 1987 decision upholding EPA’s bypass rule (*NRDC v. EPA*),[[34]](#footnote-34) the U.S. Court of Appeals for the D.C. Circuit explained that the agency’s authority over the NPDES program is broad, and that “permissible conditions set forth in NPDES permits are not limited to establishing limits on effluent discharge.”[[35]](#footnote-35) The court went on to find that, “In view of the far-reaching goals of the Act, compliance with an effluent standard cannot fairly be viewed as the ultimate object of the statute.”[[36]](#footnote-36) Elaborating on this point, the court emphasized:

To be sure, the statutory scheme is one of effluent limitations enforced through permits. But to say that the agency may not prescribe technology in specific cases is not to say that the agency is only to set limits on the discharge levels of pollutants and to ignore the means employed to achieve pollution reduction. As we have previously observed, permits may include conditions other than effluent limitations.[[37]](#footnote-37)

Thus, while the Eighth Circuit’s decision in *Iowa League of Cities* would prohibit EPA from dictating which particular technology or process a treatment plant may use inside the facility, the D.C. Circuit’s decision in *NRDC* affirms that EPA can absolutely establish permit conditions that minimize the environmental and health impacts of a facility’s choice to use a particular technology or process.

*Specificity Is Critical*

As a final point, if EPA insists on moving forward with an ill-advised authorization of blending, we urge the agency to amend the NPDES regulations to require the *specific* conditions described above in all permits for facilities that blend, as opposed to establishing a broad permitting standard (such as “minimize impacts associated with blending”) and leaving it up to the permit writer to determine what conditions would meet the standard. If EPA were to choose the latter approach, it is likely that implementation would vary and public health would not be adequately protected in all areas – especially in low-income communities and communities of color most vulnerable to environmental and health risks by proximity to the treatment systems discharging blended wastewater. More specific mandatory requirements, on the other hand, would provide certainty and clarity to the regulated industry.

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Thank you for the opportunity to express our views. We would welcome the opportunity to discuss them with you further.

Sincerely,

/s

1. Public Listening Session; Stakeholder Input on Peak Flows Management, 83 Fed. Reg. 44,623 (Aug. 31, 2018). The Federal Register notice solicited written comment by October 31, 2018, but EPA gave written permission to our organizations to provide input after that deadline. Email from Chris Kloss, EPA, to Gary Belan, American Rivers (Oct. 22, 2018). [↑](#footnote-ref-1)
2. 5 U.S.C. § 706. [↑](#footnote-ref-2)
3. National Pollutant Discharge Elimination System (NPDES) Permit Requirements for Peak Wet Weather Discharges From Publicly Owned Treatment Works Treatment Plants Serving Separate Sanitary Sewer Collection Systems, 70 Fed. Reg. 76,013, 76,015 (Dec. 22, 2005). [↑](#footnote-ref-3)
4. *See* EPA, Summary of June 19-20, 2014, Experts Forum on Public Health Impacts of Blending, at 9 (May 2015), https://www.epa.gov/sites/production/files/2015-10/documents/experts\_forum\_summary.pdf (“Very little data, such as epidemiology studies, are available to directly characterize the health risks associated with blended discharges . . . .”). [↑](#footnote-ref-4)
5. *Id.* at 17. [↑](#footnote-ref-5)
6. EPA, Primer for Municipal Wastewater Treatment Systems, at 8 (Sept. 2004), https://www3.epa.gov/npdes/pubs/primer.pdf. [↑](#footnote-ref-6)
7. *See* EPA, “Fish and Shellfish Advisories and Safe Eating Guidelines,” https://www.epa.gov/choose-fish-and-shellfish-wisely/fish-and-shellfish-advisories-and-safe-eating-guidelines. [↑](#footnote-ref-7)
8. *See* NRDC, *Swimming in Sewage* (2004), https://www.nrdc.org/sites/default/files/sewage.pdf. [↑](#footnote-ref-8)
9. Congressional Research Service, EPA’s Proposed Policy on Wastewater Blending: Background and Issues, at 11 (May 2005), https://www.everycrsreport.com/reports/RL32384.html (citing EPA, Design Manual: Municipal Wastewater Disinfection (1986)). [↑](#footnote-ref-9)
10. *Id.* (citing Rachel Katonak and Joan B. Rose, “Public Health Risks Associated with Wastewater Blending,” Department of Fisheries and Wildlife, Michigan State University (Nov. 17, 2003)). [↑](#footnote-ref-10)
11. EPA, Draft Summary of Blending Practices and the Discharge of Pollutants for Different Blending Scenarios (2014), p. 9, https://www.epa.gov/sites/production/files/2015-10/documents/sso\_lit\_review\_draft.pdf. [↑](#footnote-ref-11)
12. Water Environment Research Foundation, Characterizing the Quality of Effluent and Other Contributory Sources During Peak Wet Weather Events (2009). [↑](#footnote-ref-12)
13. *Id.* [↑](#footnote-ref-13)
14. EPA, Summary of June 19-20, 2014, Experts Forum on Public Health Impacts of Blending, at 17. [↑](#footnote-ref-14)
15. *Id.* at 6. [↑](#footnote-ref-15)
16. *Id.* at 7. [↑](#footnote-ref-16)
17. EPA, Wastewater Technology Fact Sheet: Ozone Disinfection (1999), https://www3.epa.gov/npdes/pubs/ozon.pdf. [↑](#footnote-ref-17)
18. Congressional Research Service, EPA’s Proposed Policy on Wastewater Blending: Background and Issues, at 12. [↑](#footnote-ref-18)
19. *Id.* [↑](#footnote-ref-19)
20. *Iowa League of Cities v. EPA*, 711 F.3d 844 (2013). [↑](#footnote-ref-20)
21. 70 Fed. Reg. at 76,015. [↑](#footnote-ref-21)
22. Exec. Order 12898, 32 C.F.R. § 651.17 (1994). [↑](#footnote-ref-22)
23. 40 C.F.R. § 122.42(b). [↑](#footnote-ref-23)
24. Data provided to Natural Resources Defense Council by Kevin Weiss, U.S. EPA (Jan. 2004). [↑](#footnote-ref-24)
25. EPA, Summary of June 19-20, 2014, Experts Forum on Public Health Impacts of Blending, at 26. [↑](#footnote-ref-25)
26. *Id.* at 10. [↑](#footnote-ref-26)
27. *Id.* at 20. [↑](#footnote-ref-27)
28. 33 U.S.C. § 1312(a). [↑](#footnote-ref-28)
29. 40 C.F.R. §122.44(d)(1)(i), (vi). [↑](#footnote-ref-29)
30. 70 Fed. Reg. at 76,013. [↑](#footnote-ref-30)
31. *Id.* at 76,015. [↑](#footnote-ref-31)
32. 711 F.3d at 877-78. [↑](#footnote-ref-32)
33. 33 U.S.C. § 1342(a)(2). [↑](#footnote-ref-33)
34. 40 C.F.R. § 122.41(m). [↑](#footnote-ref-34)
35. *NRDC v. EPA*, 822 F.2d 104, 122 (D.C. Cir. 1987). [↑](#footnote-ref-35)
36. *Id*. at 123. [↑](#footnote-ref-36)
37. *Id.* at 124. [↑](#footnote-ref-37)