

June 20, 2013

NATURAL RESOURCES DEFENSE COUNCIL

BY CERTIFIED MAIL AND HAND DELIVERY

The Honorable Bob Perciasepe  
Acting Administrator  
U.S. Environmental Protection Agency  
Ariel Rios Building  
1200 Pennsylvania Avenue, NW  
Mail Code: 1101A  
Washington, D.C. 20460

**Re: Notice of Intent to Sue for Failure to Promulgate National Recreational Water Quality Criteria in Compliance with the Clean Water Act**

Dear Acting Administrator Perciasepe:

Clean Ocean Action, Hackensack Riverkeeper, Heal the Bay, Natural Resources Defense Council, NY/NJ Baykeeper, Riverkeeper, and Waterkeeper Alliance ask that you take immediate action to remedy the Environmental Protection Agency's (EPA's) ongoing violations of the Federal Water Pollution Control Act (Clean Water Act), 33 U.S.C. §§ 1251–1387, as amended by the Beaches Environmental Assessment and Coastal Health Act of 2000 (BEACH Act), and the Administrative Procedure Act (APA), 5 U.S.C. §§ 551–559. In violation of these statutes, EPA's recreational water quality criteria for pathogens and pathogen indicators fail to protect human health.

This letter is sent on behalf of our organizations and their combined membership who are harmed by EPA's failure to fulfill its statutory obligations. Clean Ocean Action is a coalition-based non-profit organization working to improve and protect the quality of marine waters off the New Jersey and New York coasts. Hackensack Riverkeeper is a non-profit corporation organized to provide representation for the living resources of the Hackensack River. Heal the Bay is a non-profit organization dedicated to preserving Santa Monica Bay and all southern California coastal waters and watersheds. Natural Resources Defense Council is a national, non-profit environmental organization with over 350,000 members and a staff of scientists, lawyers, and other specialists committed to protecting public health and coastal water quality. Raritan Baykeeper, doing business as NY/NJ Baykeeper, is a non-profit organization working to protect, preserve, and restore the ecological integrity and productivity of the Hudson-Raritan Estuary. Riverkeeper is a membership-based, non-profit organization dedicated to defending the Hudson River and its tributaries and protecting the drinking water supply of New York City and Hudson Valley residents. Waterkeeper Alliance is an international alliance of water advocates working to patrol and protect rivers, streams, and coastlines around the world. This letter provides notice pursuant to 33 U.S.C. § 1365(b) that our organizations intend to bring legal action if the violations described below are not corrected within sixty days.

I. Exposure to Pathogens in Coastal Recreational Waters Is a Significant Threat to Public Health

More than 180 million people visit coastal and Great Lakes beaches every year, and swimming and surfing are favorite pastimes in the United States. Nevertheless, beach closings due to hazardous contamination are consistently high nationwide. In 2011, there were over 23,000 beach closing and health advisory days across the country. Dangerously high bacteria levels, indicating the presence of human or animal waste, prompted more than two-thirds of the closing and advisory days. The underlying culprits are generally raw and improperly treated sewage, raw animal manure, and contaminated stormwater runoff, which have a highly deleterious effect on water quality.

This pollution poses a significant threat to public health. Pathogens in contaminated waters can cause a wide range of diseases including gastroenteritis, dysentery, hepatitis, and respiratory illnesses. The Senate Committee Report on the BEACH Act describes these significant health concerns:

The public health risks from swimming in polluted coastal waters continue to be serious. The U.S. Environmental Protection Agency's (EPA's) research has found that contact with contaminated water can lead to gastrointestinal disorders and ear or skin infections, and inhalation of contaminated water can cause respiratory diseases. The pathogens responsible for these diseases can be bacteria, viruses, protozoans, fungi, or parasites. Public health risks are especially of concern to sensitive subpopulations who are particularly vulnerable.

S. Rep. No. 106-366, at 2 (2000). The BEACH Act was enacted to address mounting concerns about fecal contamination and inadequate water quality protections at the nation's coastal and Great Lakes beaches. *Id.* at 1-2; Pub. L. 106-284, 114 Stat. 870 (2000) (amending the Clean Water Act, 33 U.S.C. §§ 1251-1387).

II. EPA Has Failed to Comply with its Nondiscretionary Duties to Publish Water Quality Criteria Protective of Human Health

The BEACH Act requires EPA to revise its coastal recreational water quality criteria, last published in 1986. 33 U.S.C. § 1314(a)(9)(A). EPA's new criteria must be based on comprehensive epidemiological studies and must "protect[] human health." *Id.* (EPA shall publish "new or revised water quality criteria for pathogens and pathogen indicators (including a revised list of testing methods, as appropriate), based on the results of the studies conducted under section 1254(v) of this title, *for the purpose of protecting human health in coastal recreation waters*" (emphasis added)); *id.* § 1254(v); *see also* H.R. Rep. No. 106-98, at 6 (1999) ("EPA's 1986 criteria need to be updated to improve the scientific basis for identifying pathogens in coastal recreation waters . . . [T]he 1986 revised bacteria criteria are *inadequate indicators for determining the human health risk* from all microorganisms, including viruses or other pathogens such as giardia or cryptosporidium." (emphasis added)). The criteria must

account for all types of health risks from exposure to pathogens in coastal recreational waters, including gastrointestinal effects (such as diarrhea, stomachache, and nausea), nongastrointestinal effects (such as ear, nose, eye, and respiratory infections, and skin rashes), as well as other illnesses that can be transmitted through swimming in contaminated waters. See 33 U.S.C. § 1254(v)(1). The criteria must also protect against exposure to all sources of beachwater pollution, including stormwater runoff and sewage. *Id.* § 1254(v)(4).

EPA's 2012 Recreational Water Quality Criteria (2012 Criteria) are inadequate to meet the agency's obligations under the BEACH Act in at least three ways. First, EPA's criteria fail to protect against single day exposures to pathogens. Second, EPA fails to address the risk of nongastrointestinal illnesses that result from recreating in contaminated waters. Third, EPA's gastrointestinal illness rate of 36 illnesses per 1,000 swimmers is unacceptably high and not supported by the agency's record.

#### A. EPA's 2012 Criteria Fail to Protect Against Single Day Exposures

EPA's 1986 Ambient Water Quality Criteria for Bacteria (1986 Criteria) offered two measures of bacterial contamination in recreational waters, a geometric mean (GM) and a single sample maximum (SSM). 1986 Criteria at 8. EPA derived the GM values by translating its criteria for fecal coliform, developed in the mid-1960s, into measurements for *E. coli* and enterococci, the bacterial indicators selected for the 1986 Criteria. *Id.* at 1, 8–9. The SSM values were computed by assessing the desired chance, or confidence level, that a waterway would remain open when water quality is adequate to protect public health. *Id.* at 9. Under the 1986 Criteria, a waterway was considered non-compliant if the 30-day average of its water quality samples exceeded the maximum acceptable GM<sup>1</sup> or if any *single* sample exceeded the SSM confidence level set by EPA.<sup>2</sup> *Id.*

EPA's 2012 Criteria also use two calculations to measure bacterial contamination, a GM and a statistical threshold value (STV). The GM is calculated with the same method employed by the 1986 Criteria, a 30-day average of water quality samples. 2012 Criteria at 39. EPA, however, replaced the 1986 SSM measurement with the STV. The STV approximates the 90<sup>th</sup> percentile of a waterway's water quality sample distribution and is intended to be a value that may be exceeded by up to 10 percent of water quality samples. *Id.* at 40. Accordingly, a waterway is not considered in violation of the criteria for bacteria until *more than 10 percent* of samples taken over the course of 30 days contain bacterial levels over EPA limits. *Id.* at 41.

The STV allows bacterial levels to *repeatedly* exceed pathogen exposure limits that EPA has determined to be unsafe. As a result, the STV fails to protect the public from acute and single-day exposures to harmful pathogens. Swimmers using beaches vulnerable to

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<sup>1</sup> The full GM calculation included taking the log<sub>10</sub> of sample values, averaging those values, and raising that average to the power of 10. *Id.* at 8; 2012 Criteria at 39.

<sup>2</sup> The 1986 Criteria contained four SSM values based on a waterway's intensity of use, corresponding to the 75<sup>th</sup>, 82<sup>nd</sup>, 90<sup>th</sup>, and 95<sup>th</sup> percentiles of the expected water quality sampling distribution of GM values. 1986 Criteria at 9, tbl. 4.

dangerous but short-lived fluctuations in water quality—caused by sewer overflows after rainstorms, for example—are especially at risk. These swimmers do not swim on an “average” day measured over a 30-day period, nor are they aware that they may be swimming on a day where a periodic exceedance is allowed; they swim on the single day they choose and, on that day, risk exposure to a variety of illnesses. EPA has impermissibly interpreted its mandate to protect human health as permitting the agency to ignore the health risks faced by swimmers from daily exposures to pathogens.<sup>3</sup>

EPA’s decision to not protect the public from acute pathogen exposure is contrary to the language and intent of the BEACH Act. Congress intended that EPA’s revised criteria “protect[] human health” and improve, not degrade, the “inadequate” protections offered by the 1986 Criteria. 33 U.S.C. § 1314(a)(9)(A); H.R. Rep. No. 106-98, at 6. The BEACH Act’s legislative history demonstrates Congress’s specific concern with the risks posed by single instances of pathogen exposure. *See* 145 Cong. Rec. H2282-01 (daily ed. Apr. 22, 1999) (statement of Rep. Bilbray) (“This bill is addressing something that we have overlooked, and that is the fact that our children and our families can enter coastal waters on one day, for one moment, and contract diseases such as hepatitis, encephalitis, and different related illnesses related to pathogens. I have had surfers in my district actually get inner brain infections and almost die from one exposure. These are things that we need to address.”).

EPA must protect against acute health risks from one-time exposures so that people are safe every time they swim. By declining to adopt day-of-use protections, EPA has violated its nondiscretionary duty to establish criteria for the purpose of protecting human health.

#### B. EPA’s 2012 Criteria Fail to Protect Against Nongastrointestinal Illness

The BEACH Act requires EPA to assess nongastrointestinal health risks from exposure to pathogens and to publish criteria addressing those risks. *See* 33 U.S.C. § 1254(v)(1) (requiring EPA to assess “potential human health risks resulting from exposure to pathogens in coastal recreation waters, *including nongastrointestinal effects . . .*” (emphasis added)); *id.* § 1314(a)(9) (A) (EPA “shall publish new or revised water quality criteria . . . based on the results of the studies conducted under section 1254(v) of this title . . .”). Nongastrointestinal effects of pathogen exposure include rashes, upper respiratory illnesses, and ear, eye and sinus

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<sup>3</sup> The 2012 Criteria’s use of an optional measurement of illness rates, Beach Action Values (BAVs), highlights the arbitrariness of the STV approach. EPA introduces BAVs for voluntary use by states in beach notification decisions. *Id.* at 44. When a single water sample exceeds the maximum acceptable bacterial level (or BAV), swimmers are notified about the possibility of health risks. Beach advisories or closures should remain posted until bacterial levels fall below the BAV. *Id.* EPA’s water quality criteria, however, are *less* protective than the BAVs. The 2012 Criteria’s STV approach, described above, permits greater levels of bacterial contamination than the BAVs and allows up to 10 percent of water samples to exceed maximum bacterial levels before a waterway is considered to exceed the criteria. Furthermore, because BAVs are not a formal component of EPA’s criteria, they cannot be relied upon to rectify the criteria’s deficiencies.

infections, all of which are commonly contracted by recreational swimmers. The Senate Committee Report on the BEACH Act makes clear that Congress was well-aware of these risks and required EPA to address them. S. Rep. No. 106-366, at 2 (2000) (“[C]ontact with contaminated water can lead to gastrointestinal disorders and ear or skin infections, and inhalation of contaminated water can cause respiratory diseases.”).

Despite this statutory mandate, EPA’s 2012 Criteria fail to protect against nongastrointestinal illnesses. EPA improperly assumes that a measurement of gastrointestinal illness rates can always be used as a proxy for nongastrointestinal illnesses. *See* 2012 Criteria at 15 (“[C]riteria based on protecting the public from GI illness via the use of FIB [fecal indicator bacteria] will prevent most types of recreational waterborne illnesses. In general, these other illnesses occur at a lower rate than GI illness . . .”). EPA’s data do not demonstrate that all types of nongastrointestinal illnesses are always associated with gastrointestinal ailments.<sup>4</sup> Moreover, assumptions about relative differences between gastrointestinal and nongastrointestinal human health risks resulting from exposure to pathogens do not fulfill EPA’s nondiscretionary duty under the BEACH Act to study these risks and develop specific criteria. Accordingly, whatever incidental protection EPA’s assumption-based approach may offer are insufficient to fulfill its duty to protect against the nongastrointestinal effects of pathogen exposure.

#### C. EPA’s 36/1000 Risk Rate for Illness Is Unsupported by the Record

EPA’s 2012 Criteria include a set of values corresponding to a risk rate for gastrointestinal illness of 36 illnesses per 1,000 primary contact recreators (36/1000) in marine and fresh waters. 2012 Criteria at 43. In other words, EPA has deemed it acceptable for 36 of every 1,000 recreators to become ill with gastroenteritis—including vomiting, nausea, or stomachache—from swimming in waters that just meet EPA’s criteria values.<sup>5</sup>

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<sup>4</sup> For example, an epidemiological study conducted by Fleisher et al. found that adults bathing in certain marine waters were 1.76 times more likely to report gastrointestinal illnesses but 5.91 times more likely to report a skin illness (including rashes, sores, and ulcers), relative to non-bathers. Moreover, the study reported evidence of a dose–response relationship between skin illnesses and increasing pathogen (enterococci) exposure among recreators. Fleisher et al., *The BEACHES Study: health effects and exposures from non-point source microbial contaminants in subtropical recreational marine waters*, 39 *Int’l J. of Epidemiology* 1291, 1291-92 (2010); *see also* Wade et al., *Rapidly measured indicators of recreational water quality and swimming-associated illness at marine beaches: a prospective cohort study*, 9 *Env’tl. Health* 66, tbl. 6 (2010) (observing higher incidences of earaches and upper respiratory illnesses than gastrointestinal illnesses in swimmers as compared to non-swimmers).

<sup>5</sup> EPA’s 2012 Criteria also offer the option to adopt an alternative set of values corresponding to a risk rate for gastrointestinal illness of 32 per 1,000 primary contact recreators (32/1000). *Id.* at 43.

EPA's 36/1000 risk rate for illness is contrary to the record and not protective of human health. EPA's own epidemiological studies show that the likelihood of contracting swimming-associated gastrointestinal illnesses is statistically significant at least at the rate of 32 per 1,000 primary contact recreators (32/1000). *Id.* at 27–28 . At the very least, any rate higher than 32/1000 cannot be health protective.<sup>6</sup>

The 2012 Criteria's optional BAV measure, moreover, highlights the lack of protection offered by the 36/1000 illness rate and corresponding criteria. As discussed above, *supra* note 3, EPA intends BAVs to be used by states in beach notification decisions. 2012 Criteria at 44. If a single water sample exceeds a BAV, states should notify swimmers about health risks from swimming in contaminated waters or close the waterway to recreational use. The BAVs proposed by EPA call for this public notification when instantaneous bacterial levels for enterococci, for example, are above 70 cfu/100mL (for states that adopt a 36/1000 illness rate) or 60 cfu/100mL (for states that choose to adopt a 32/1000 illness rate). EPA, however, declined to include these BAVs as a formal component of its criteria, instead allowing states to use BAVs without incorporating them into their water quality standards. Meanwhile, EPA's STV water quality criteria are far *less* protective than the optional BAVs, despite the agency's acknowledgement that the BAVs are "conservative and precautionary."<sup>7</sup> *Id.* at 44. EPA's 2012 Criteria, therefore, offer two inconsistent standards: a more rigorous, optional BAV standard for notifying the public about contaminated beaches, and another, relaxed set of criteria for corrective action. EPA's recognition that the public should be protected from the health risks of swimming in waters with bacteria levels of 60 or 70 enterococci cfu/100mL make clear that a higher STV level of 130 enterococci cfu/100mL (and its corresponding risk rate of 36/1000) is not and cannot be safe. EPA, accordingly, has violated its nondiscretionary duty to establish criteria for the purpose of protecting human health.

### III. EPA's Failure to Explain What Constitutes a Health Protective Standard Is Arbitrary and Capricious

EPA's 2012 Criteria also fail to comply with the requirements of the APA. EPA is required to "articulate a satisfactory explanation for its action, including a rational connection between the facts found and the choice made." *Motor Vehicle Mfrs. Ass'n of the U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (citation and quotation marks omitted) (discussing the APA's arbitrary and capricious standard). The 2012 Criteria, however, are

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<sup>6</sup> The difference between a rate of 32/1000 and 36/1000 is significant. For example, an additional 224,000 recreators of the fifty-six million individuals who visit Santa Monica Bay beaches and an additional 32,000 recreators of the over 8 million annual visitors to Gateway National Recreation Area parks along the New York and New Jersey coastlines would be likely to suffer from vomiting, nausea, stomachaches, or fevers under EPA's higher 36/1000 rate.

<sup>7</sup> EPA's corresponding STV criteria permits bacteria levels of 130 enterococci cfu/100mL (for states that adopt a 36/1000 illness rate) and 110 enterococci cfu/100mL (for states that adopt 32/1000 illness rate), and further allows 10 percent of samples to contain bacterial levels over those limits. *Id.* at 39, 43.

arbitrarily devoid of a rational explanation of what constitutes health protective levels and specifically lacks a discussion of how a 36/1000 (or 32/1000) illness rate protects human health. EPA provides only a cursory statement that the criteria are “protective of the designated use of primary contact recreation.” 2012 Criteria at 43. EPA does not explain how the criteria are protective, if and how the agency arrived at a determination that they are in fact protective, why nongastrointestinal illnesses can be protected by a proxy for gastrointestinal illnesses, or what standards were used to assess whether a given level of bacterial contamination is protective of human health.

EPA’s only apparent explanation is that the 2012 criteria levels are health protective because, according to the agency, they are comparable to those in the 1986 Criteria which have a “history of acceptance by the public.”<sup>8</sup> *Id.* EPA’s reliance on a supposed public familiarity with a high risk of illness—and its failure to explain how the proposed 36/1000 and 32/1000 illness rates protect human health—is not rational. EPA has itself acknowledged that the selection of its 1986 risk rate was arbitrary. 1986 Criteria at 10 (“[W]hile this level was based on the historically accepted risk, it is still arbitrary insofar as the historical risk was itself arbitrary.”). By relying on a translation of the 1986 criteria values into 2012 terms, EPA’s revised criteria simply compound this arbitrariness. EPA is required to independently determine contamination levels that protect human health and articulate a rational explanation for its selection of those levels. It has failed to do so here.

#### IV. Conclusion

By declining to protect the public against single day exposures to pathogens and nongastrointestinal illnesses that result from swimming in contaminated waters, and by allowing states to employ criteria values corresponding to a 36/1000 risk rate for illness, EPA violated its nondiscretionary duty under the BEACH Act to establish criteria for the purpose of protecting human health. EPA has also violated the APA by arbitrarily failing to articulate an explanation of how its criteria levels are protective of human health.

Please cure these violations within sixty days. If EPA fails to take immediate steps to address its non-compliance with the BEACH Act and the APA, our organizations will file suit in federal district court seeking declaratory relief, injunctive relief, and litigation costs, as appropriate.

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<sup>8</sup> EPA contends that the 2012 Criteria offer the same level of protection as its 1986 values because the revised criteria include a broader definition of gastrointestinal illness. *Id.* at 14. However, in 1986, EPA concluded that a GM of 35 cfu/100mL would result in a risk of 19 cases of highly credibly gastrointestinal illness (HCGI) per 1,000 recreators (19/1000) in marine waters, and eight cases per 1,000 recreators in freshwater. 1986 Criteria at 9, tbl. 4. HCGI was defined to include vomiting, diarrhea with fever or a disabling condition, or stomachache or nausea accompanied by a fever. 2012 Criteria at 14. EPA’s 2012 Criteria, as discussed above, endorse a risk rate of 36/1000 or 32/1000 recreators, substantially higher than either the 19/1000 or 8/1000 rates required by the 1986 Criteria, based on a definition of gastrointestinal illness that includes diarrhea, stomachache, or nausea without the occurrence of fever. *Id.* at 14, 43.

The name, address, and telephone number of each person giving notice pursuant to this letter are:

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Attention: Christopher Len

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Attention: Phillip Musegaas

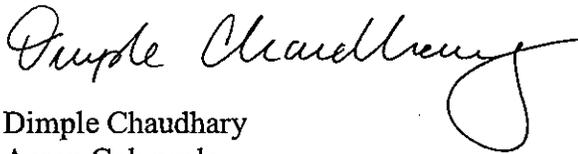
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Legal counsel for Clean Ocean Action, Hackensack Riverkeeper, Heal the Bay, Natural Resources Defense Council, NY/NJ Baykeeper, Riverkeeper, and Waterkeeper Alliance are:

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Do not hesitate to contact us if you would like to discuss this matter.

Respectfully,



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*Counsel for Natural Resources Defense Council,  
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cc:

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