

## **Enforcement of water quality laws and regulations in the wastewater sector**

A concept proposal for the Clean Water Summit Partners

prepared by

Michael Kiparsky, Ph.D.  
Deborah Lambe, J.D.  
Holly Doremus, J.D., Ph.D.

Wheeler Institute for Water Law & Policy at Berkeley Law

December 2013



Wheeler Institute for  
Water Law & Policy

## **Motivation**

The purpose of this document is to give an overview of our initial thinking on Clean Water Act (CWA) enforcement in the wastewater sector, and in particular to review areas related to citizen suits. The intent is to briefly lay out the conceptual landscape, and to present a preliminary “menu” of questions that may merit further research, and to solicit comments from the Clean Water Summit Partners about the potential for such a research project.

## **Introduction**

The intent of the Clean Water Act (CWA) is unambiguous – its goal is to eliminate pollution of the nation’s waters. As in other sectors, wastewater collection and treatment systems have not always achieved this goal in their infrastructure and operations – violations of the discharge prohibitions in the CWA and of National Pollutant Discharge Elimination System (NPDES) permits do occur. For wastewater utilities, one cause of violations is the unpermitted discharge of wastewater from the sanitary sewer system before treatment. Such discharges are called Sanitary Sewer Overflows (SSOs).

Wastewater utilities are squeezed. Trends towards increasingly strict water quality standards force improvement to treatment systems, while perceived political challenges can make it difficult to raise rates to fund such capital and operational expenses. Arguably, utilities cannot possibly meet water quality standards with complete reliability given limitations of technology and funding.

A possible increase in legal activity against wastewater utilities based on the CWA’s citizen suit provision, if substantiated, may highlight emerging questions about enforcement of the CWA. Is any and all enforcement of the CWA desirable? Can some enforcement of the CWA produce undesirable outcomes or unintended effects? Is there potential for improvement in regulation of municipal wastewater systems to both achieve clean water goals and protect the interests of ratepayers and taxpayers?

The Wheeler Institute for Water Law and Policy at Berkeley Law recognizes the potential importance of emerging challenges in CWA enforcement in California’s wastewater sector. This document briefly describes the scope of a comprehensive analysis of the issues. The output of such a project would be a U.C. Berkeley whitepaper including legal and empirical analysis and appropriate recommendations for potential policy improvements. The project would also include appropriate outreach activities. The target audience would be state and federal policy-makers, as well as other stakeholders and interested citizens.

## **CWA enforcement relies on citizen suits**

The CWA is enforced through oversight by the states and the US EPA, augmented by citizen suits. Under the CWA, citizens with standing may sue to force a violator to comply with the CWA. In practice, citizen suit enforcement can be a central element of the CWA’s effectiveness, as regulators may not have sufficient reach and resources to effectively police every NPDES permit holder.

Anecdotal reports and preliminary analysis by the State Water Resources Control Board and by the California Association of Sanitation Agencies suggest a possible increase in the frequency of citizen suits related to SSOs in California, but to our knowledge no comprehensive analysis of this topic has

been published. Moreover, sources suggest that the vast majority of citizen suits result in settlement. Although the benefits of the CWA in general have been the subject of substantial research, whether and how water quality benefits result from citizen suits and settlements has not yet been documented in a robust, analytical fashion.

### **A sensitive topic**

The proposed research would investigate a longstanding conversation and debate on citizen suit enforcement of the CWA, making it vital to approach this topic with sensitivity, thoroughness, and an even hand. Members of the regulated community have suggested that the CWA imposes too great a burden, while environmental advocates have suggested that some dischargers may be underfunding and/or mismanaging their programs. Regulators may assume that chronic violations can be addressed through infrastructure upgrades. Viewpoints on CWA enforcement are undoubtedly varied. The CWA has a multi-decade track record and is justly credited with significant improvements in the nation's water quality. Even with the best of intentions, contemplating any changes to its implementation must be approached with great care. As a result, this proposed project would characterize and analyze the range of viewpoints carefully and with nuance.

It is important to emphasize that CWA enforcement may be more complex and potentially contentious than other statutes with citizen enforcement that have been revised in recent years. Unlike the Americans with Disability Act (ADA) and California's Proposition 65, the pollution sources governed by NPDES permits are often individually permitted, place-specific, and dynamic, with individual violations that can be transient but recurring. Our work would help to determine what lessons can, and cannot, be drawn from these previous experiences.

### **A comprehensive approach is necessary**

Although a perceived increase in CWA citizen suits related to SSOs may be the primary motivator for interest in research on CWA enforcement, a thorough analysis would require consideration of the legal, regulatory, technical, political, and financial context. In order to robustly address the proximate issue of citizen suits and CWA enforcement, these factors would need to be considered in concert.

For example, an empirical description of a trend in citizen suits in the wastewater sector would not necessarily indicate a problem – citizen suits have clear purpose under the law. Rather, such a trend would arguably need to be coupled with evidence that the activity is causing utilities to incur undue expense without providing water quality benefits. Even presupposing that our analysis surfaces such an issue, any recommendations for action would need to consider multiple possibilities, including an analysis of the permitting process and avenues for change.

### **Proposed areas of examination**

The overarching question motivating this research is to ask whether the current legal and regulatory framework as it applies to the wastewater sector provides incentives aligned to best achieve CWA goals. We propose the following topics for investigation, with the overarching goal of addressing perceived challenges resulting from CWA enforcement related to SSOs, and developing potential solutions. Note that the following elements are to some extent modular – many could be conceived

of as individual research efforts. However, as noted above, we believe that an analysis capable of drawing the most robust conclusions would address all or most of these topics.

*Group 1: Essential elements*

This group of research topics includes the empirical and legal analysis that would be central to investigating and possibly demonstrating the scope and nature of the problem of citizen suits related to SSOs in California. These items would need to be covered with some rigor in order to draw strong conclusions.

- Conceptual review of the issues
  - Physical definition and aspects of SSOs
  - Potential scale of the problem
  - Uncertainty and variability
  - Literature review of relevant published work on SSOs and scale of the problem
- Legal Framework
  - Review the relevant requirements of the CWA
  - Review the relevant sections of California law
  - Perception vs. reality of zero tolerance for dischargers under CWA
  - Review of relevant secondary sources
  - Overview of citizen suits, including review of typical process in practice and any documented deviations from the ideal
- Empirical analysis of trends and details in citizen suits
  - Is there is an identifiable trend in citizen suits related to wastewater utilities, and targeted at SSOs in particular? If so, what can be learned from their outcomes?
  - While we would make use of existing data sets developed by CASA and other sources, we know of no comprehensive centralized databases focused on CWA citizen suits. The Appendix describes the 'layers' of data gathering, and the potential value of each additional increment of effort.
  - Basic statistical analysis could be conducted to identify trends, assuming sufficient data.
- Regulatory analysis
  - Overarching question - Could permitting processes and procedures be altered to better reflect the technical realities of POTW design and operation, while maintaining or improving outcomes for water quality protection?
  - What is the role of permits? For example, SSOs are defined as unpermitted discharges, but this does not necessarily mean zero discharge of pollutants is required for compliance.
  - What are the requirements under the law for permitting? What is revealed by an empirical analysis of a sample of permit requirements?
  - What provisions are typically contained in permits? What is the process by which NPDES and Waste Discharge Requirement (WDR) permits are developed in practice? What agencies are involved?
- Comparative review of other relevant statutes - what similarities and differences can be surfaced through comparative analysis?
  - Risk regulation – To what extent is water quality under CWA and related regulations handled in effect as a deterministic problem? If so, can this be justified given the technical realities of collection and treatment systems? Are there relevant lessons

from other regulatory contexts, such as risk-based regulation of chemicals, that could inform CWA enforcement?

- Air quality regulations – What are the potential and challenges to finding analogues from air quality safe harbor provisions?
- Other citizen suit reforms — Review recent reforms targeting alleged abuses of citizen enforcement under Americans with Disability Act and California Proposition 65. How are these statutes similar and different in terms of complexity, precision, universality of requirements, and so forth?

### *Group 2: Related items*

This group includes items that are conceptually tied to the central question of citizen suits and SSOs. Logical arguments would need to be addressed to shore up the strength of potential conclusions. Note that, at first pass, elements of this group could likely be approached in much less detail than the Group 1 topics. Our approach here would be to rely on secondary sources for this information, or to bring in experts for rapid analysis.

- Water quality impacts from SSOs
  - Review of the range of documented and theoretical impacts from dry- and wet-weather SSO events, and a range of existing and emerging technical solutions.
  - Can a volume-based approach to defining the importance of SSOs be justified by actual or potential water-quality impacts?
  - Are there perverse incentives in place in CWA provisions that hinder optimization of engineered system improvements?
- Financial implications of compliance – a conceptual analysis
  - Is it feasible to repair wastewater collection and treatment systems to reliably achieve the requirements under existing permits and/or to achieve zero discharge? What would a reasonable estimate of those costs be in the aggregate for California? How would such costs pass through to rate payers and/or taxpayers if they were actually implemented? How would the scale of such costs compare to the potential water quality improvements from their implementation?
- Funding options and challenges
  - What does it take to increase rates for wastewater services in California? Are there conflicts between raising rates in principle, and the reality of doing so in practice?
  - Are there cases where the system operator(s) are different entities from those who can raise rates? If so, how might that restrict the ability to increase rates in practice?
  - How do requirements under Prop 218 (i.e., taxes require supermajority vote of the people, user fees a majority vote of the people) influence the potential for rate increases?
  - Are there perceived differences in regulators' attitudes towards rate increases, and how do they compare to public attitudes?

### *Group 3: Synthesis*

- Synthesis and recommendations
  - Surfacing interconnections between these disparate elements is important. We believe that a comprehensive analysis is necessary to draw robust conclusions on this topic because of its complexity and political sensitivity.

## **General approach**

Information will be gathered through legal and regulatory review, interviews with regulators and key members of the regulated community, and analysis of permits and data on citizen suits.

## **Products and audience**

The target audience would be state and federal policy-makers, as well as other stakeholders and interested citizens. We strive to produce reports that are digestible to a non-technical and non-legal audience, but still retain the rigor and credibility that comes with academic-level research.

Products from a project as described above would include:

- Minimally, a U.C. Berkeley whitepaper including legal and empirical analysis and appropriate recommendations for potential policy improvements as appropriate.
- Note that the attached budget includes a rough cost estimate for engineers from the ReNUWIt program to engage with questions focusing on the financial implications. A comprehensive, statewide analysis is not feasible, nor is it the goal. Rather, the goal would be to describe possibilities for reducing I&I events in a representative system or systems, to demonstrate how expenses might pass through to ratepayers or taxpayers in an illustrative case study or studies. Detailed biological and chemical analysis of water quality impacts are beyond the scope of this project.
- Additional outreach activities such as engagement with stakeholders could follow naturally from the research activities. In many cases, our staff and faculty have opportunities to engage with media or give invited testimony as follow-on activities to research projects.
- Depending on the results, a U.C. Berkeley-sponsored convening of experts and stakeholders to discuss implications and implementation would be a possible follow-on project.

## **Wheeler Institute for Water Law & Policy and potential collaborators**

**The Wheeler Institute for Water Law & Policy** develops innovative law and policy solutions to critical water issues through interdisciplinary research, analysis, and engagement. Established in 2012 as a new initiative at the Center for Law, Energy & the Environment at Berkeley Law, the institute is dedicated to advancing the stewardship of California's water resources through developing solutions at the intersection of law, policy and science.

**The Center for Law, Energy & the Environment (CLEE)** at Berkeley Law develops policy solutions to the most pressing environmental and energy issues at the state, local, and national levels. The Center works with government, business, and the nonprofit sector to help solve urgent environmental and energy problems. Drawing on the combined expertise of faculty and students across UC Berkeley, CLEE conducts research and provides public access to reliable data on such complex issues as climate change, conversion to clean energy, and water scarcity. The Center's law and policy experts are helping California transition to clean and renewable energy sources, introduce reforms that will prepare the water sector for climate change impacts, and revise transportation and land use policies to reduce reliance on fossil fuels.

The Wheeler Institute for Water Law & Policy at Berkeley Law is well positioned to execute this project. Project personnel would include faculty, staff and students from the Wheeler Institute as well as key collaborators selected for relevant expertise. Specific participants would include:

**Michael Kiparsky** is Associate Director of the Wheeler Institute for Water Law and Policy at Berkeley Law. Dr. Kiparsky has worked on technical and policy aspects of water resources management, and his overarching professional interest lies at the intersection between the two. He has published on governance and policy of complex water systems, risk analysis, impacts of climate change on hydrology, adaptation to climate change, and other topics. He was previously on the faculty at the University of Idaho, and has water-related experience in consulting, non-profit, and agency settings. Dr. Kiparsky earned a Ph.D. from U.C. Berkeley's Energy and Resources Group, where he was an NSF Graduate Research Fellow, a Udall Scholar, a CALFED Science Scholar, and the first ACWA Steve Hall Water Law & Policy Scholar. He also holds an A.B. in Biology from Brown University.

**Deborah Lambe** is a Senior Policy Associate at the Center on Law, Energy & the Environment (CLEE) at the University of California, Berkeley, School of Law. Prior to joining CLEE, she practiced environmental, land use and real estate law, both in private practice and in government. Deborah received her B.A. from U.C. Berkeley, and her J.D. from U.C. Berkeley School of Law (Boalt Hall). In addition to her law degree, Deborah has a master's degree in public administration from Harvard's Kennedy School of Government, where she specialized in energy policy and environmental economics.

**Nell Green Nylen** is a Fellow with the Wheeler Institute for Water Law and Policy at Berkeley Law. She has long-standing interests in water issues and seeking collaborative, interdisciplinary solutions to environmental problems and has published on federal agency planning and decision making. Nell recently completed a clerkship with Justice Gregory J. Hobbs of the Colorado Supreme Court. During law school, she interned with the California Attorney General's Office and the Center for Biological Diversity. She co-organized the 2012 California Water Law Symposium,

contributed to research furthering an unincorporated Central Valley community's goal of improving drinking water quality and availability for its residents, coordinated group comments regarding two proposed administrative actions, and was an Articles Editor for *Ecology Law Quarterly*. Before law school, Nell worked for the U.S. Geological Survey and several research institutions. She earned a J.D. with a Certificate of Specialization in Environmental Law from Berkeley Law and a B.S. and Ph.D. in Geological and Environmental Sciences from Stanford University. An NSF Graduate Research Fellowship supported her dissertation research on past climatic and environmental change along the Northern California coast.

**Holly Doremus** is Professor of Law at the University of California, Berkeley, and a Member Scholar of the Center for Progressive Reform. She has written extensively about environmental and natural resources law and policy, with particular emphasis on biodiversity conservation and on the interplay of science and policy. She received her B.S. in biology from Trinity College (Hartford, CT), Ph.D. in plant physiology from Cornell University, and J.D. from UC Berkeley School of Law (Boalt Hall). After law school, she clerked for Judge Diarmuid O'Scannlain of the United States Court of Appeals for the Ninth Circuit and practiced law in Corvallis, Oregon, before joining the faculty at UC Davis. After 14 years at UC Davis, she moved to UC Berkeley in 2009.

**Students** from Berkeley Law provide a deep, talented reservoir. We would enlist students primarily for data gathering and basic analysis on this project.

If it is determined that technical analysis will be part of this project, we would draw on our close ties to technical experts and deep experience with interdisciplinary research. In particular, **Prof. Trish Holden** (UCSB) is expert on SSO issues and collaborator. **Prof. Arpad Horvath** (UC Berkeley) is a leading expert on life cycle assessment and asset management in water and wastewater systems. Prof. Horvath's lab is currently conducting highly relevant research on water systems that positions them well to develop first-order estimates to the financial and economic questions posed in the brief proposal above.

The Wheeler Institute is part of the **ReNUWIt** network, a National Science Foundation funded collaboration between U.C. Berkeley, Stanford, and the Colorado School of Mines that brings together engineers, scientists, and integrative experts with the goal of reinventing the nation's urban water infrastructure. ReNUWIt is a strong resource for all of our urban water projects, including this proposed project.

Note that we have had only preliminary, conceptual discussions about these potential collaborations, but are confident that they could be brought to fruition if desired.



## Appendix: Options for gathering empirical data

In California, there are several hundred NPDES permits for Publically Operated Treatment Works. Data would be required to rigorously determine whether there have been changes in citizen suit activity over the recent past, such as through an examination of a five or ten year window. To do so, the following steps could be considered:

- **Notice of Intent.** No citizen suit can be brought prior to sixty days after notice of the alleged violation has been given to (i) EPA, (ii) the state, and (iii) the alleged violator. This notice is given by means of a Notice of Intent (NOI). Our approach to obtaining NOIs for analysis would first involve engagement with EPA and/or the State Board. Ideally one or both of these agencies would be supportive of our efforts and would provide data. Since notices of Intent are likely subject to both the California Public Records Act and the Federal Freedom of Information Act, we would also, if necessary, prepare and send records act requests to EPA and the State Board for all NOIs filed over a period of years to be determined. Evaluating the resulting data may allow us to assess whether there has been a statistically significant change in the number of NOIs filed over the relevant period (assuming there are enough NOIs to make such a determination). Normalizing trends in NOIs to the number of reported violations could produce a more robust analysis if sufficient data are available. A potential second component of the research into NOIs would be to evaluate the contents of NOIs along with the corresponding NPDES permits. The goal would be to determine whether certain permit requirements tend to trigger NOIs.
- **Lawsuits and the Threat of Litigation.** We have identified a legal database that appears to contain a searchable database of all federal complaints filed in California. Clean Water Act citizen suits could be quantified through database queries for the period of interest. As with NOIs, lawsuit numbers would be evaluated for change over time. In addition, comparing time series of the number of lawsuits filed and the number of NOIs filed each year could reveal trends in rates of settlements, since NOIs that do not result in lawsuits may indicate pre-litigation settlement. A potential second component of the research would be to contact those POTWs that are the subject of a NOI but against whom no complaint was filed. Human subject review may be required in this case.
- **Consent Decrees.** To the extent that lawsuits are resolved through court-ordered consent decrees, such documents may also be contained in searchable legal databases. The terms of the settlements, if they are available, may include requirements such as attorneys' fees, capital improvements, supplemental environmental projects, reporting requirements, performance standards, and other elements. Examination of such data would likely provide relevant information.
- **Litigation.** If litigation is pursued, the final result of the litigation is likely available on legal research services. Again, the results of litigation over time would be examined quantitatively and qualitatively.
- **Survey.** A survey could be sent to NPDES permit-holders to inquire about citizens' suit activity in the experience of their utilities, as well as their perception of trends and vulnerability to such activity. Their anonymous responses could supplement the empirical data analysis.

Our a priori expectation based on anecdotal evidence is that the quantity of data points in each of the categories would likely decrease as the legal process progresses. For example, there would likely be fewer examples of lawsuits resolved by trial than NOIs. However, each of the potential additional levels of analysis could reveal richer qualitative data within each case.