

Is an Exemption from U.S. Groundwater Regulations a Loophole or a Noose?

B. Daniels, E. Weinthal, and B. Hudson¹

Is an Exemption from U.S. Groundwater Regulations a Loophole or a Noose?

Abstract

Groundwater is a classic common pool resource. In the United States, the Safe Drinking Water Act (SDWA) regulates most groundwater used for drinking water. The Act covers most urban areas but because it does not cover small water systems, it implicitly exempts nearly half of those living in rural America. In large measure, monitoring required by the SDWA has illustrated the prevalence of naturally occurring arsenic in groundwater in concentrated areas throughout the country. Even though many in Congress seem aware of this threat and have, indeed, supported more stringent arsenic standards, Congress, on the whole, has failed to update the SDWA to cover those water systems left unprotected by the Act. Conventional political science theory suggests that effective congressional oversight depends on Congress creating both active (e.g., hearings and commissioned studies) and passive oversight mechanisms (i.e., citizen suits and opportunities for constituent feedback). In this case, Congress had, in fact, created sufficient tools to detect a serious problem but, having identified it, nevertheless failed to respond. Why? In exploring Congress's inaction, we find something unexpected: the structure of the SDWA has created perverse incentives not only for unregulated water systems but also for regulated systems to push to keep exempted water systems unregulated. The outcome is that those outside of the SDWA's protections remain outside and continue to drink contaminated water by the glass full. So, while Congress created a loophole, it may have inadvertently tied a noose.

¹ Brigham Daniels, J.D, Assistant professor, University of Houston Law Center (brigham.daniels@duke.edu); Erika Weinthal, Associate Professor of Environmental Policy Nicholas School of the Environment and Earth Sciences, Duke University (weinthal@duke.edu); Blake Hudson. Baker Botts LLP (blakehudson23@gmail.com)

Is an Exemption from U.S. Groundwater Regulations a Loophole or a Noose?¹

In the 1970s following an escalation in environmental activism, Congress passed a series of historic pieces of legislation that gave government a dominant role in protecting the natural environment on behalf of the U.S. citizenry. Among these, the 1974 Safe Drinking Water Act (SDWA) was designed to ensure that the population at-large was no longer exposed to drinking water with high levels of pollutants, such as arsenic, that could have an adverse effect on human health. Over time, Congress and the Environmental Protection Agency (EPA) have increased the reach of the SDWA; most recently, with regard to arsenic Congress passed a resolution instructing the EPA to maintain its decision in 2001 to make the arsenic standard more stringent by reducing the maximum concentration level (MCL) of arsenic in drinking water from 50 parts per billion (ppb) to 10 ppb, effectively precluding the Bush administration's attempt to roll back the new standard.

Yet, while approximately eighty-five percent of Americans rely on drinking water systems regulated by the SDWA (EPA, 2003), Congress has failed to extend coverage to the remaining fifteen percent. This means roughly forty-five million people rely on drinking water that is outside of the SDWA's scope. Why is this? Owing to a significant loophole, the SDWA does not protect or regulate any water system that serves fewer than twenty-five people or has fewer than fifteen service connections associated with it.² Most of the people who rely on these small water systems, which draw upon groundwater resources, live in the rural United States. In fact, according to the Congressional Research Service, forty-five percent of rural Americans rely on small water systems that escape regulation under the SDWA (Copeland, 1999). A large percentage of this population is exposed to naturally occurring arsenic, which is pervasive throughout the country. States as geographically dispersed as Maine, New Jersey, North Carolina, New Mexico and California have some of the highest concentrations of naturally occurring arsenic.

In this paper, we examine why, despite a growing body of scientific evidence that demonstrates the need to test for and remove arsenic from drinking water systems, Congress has not sought to extend the provisions of the SDWA to the remaining population it initially exempted. The literature on Congressional oversight (McCubbins and Schwartz, 1984) leads us to anticipate that through the varied oversight tools at its disposal, Congress would have the necessary information to respond effectively to the threat posed to unregulated water systems by naturally occurring arsenic. As illustrated in further detail below, the arsenic case challenges this conventional wisdom. Although Congress has established sufficient tools to detect the problem, and, moreover, many members of Congress are aware of the threat, it has not taken action to address the threats posed to those initially exempted from the SDWA.

It turns out that the structure of the SDWA has inhibited collective action which might otherwise expand the Act's coverage by increasing the transaction costs of extending coverage of the SDWA to water systems initially exempted. First, as the EPA has set more stringent standards, the costs of complying with the Act have increased. Because water system users must pay for improvements necessary to comply with the SDWA, as standards are ratcheted up, those outside of the Act's reach have all the more reason to maintain the status quo. Second, as the EPA's standards have become more stringent, some water systems regulated by the SDWA have attempted to find

ways to circumvent compliance. One manifestation of this problem is that those covered by the SDWA have considered “downsizing” their water systems to take advantage of the loophole for small systems. In this way, those regulated by the SDWA have a perverse incentive to retain, if not expand, the loophole by using it as a potential escape hatch from the Act.

In the context of the SDWA, these perverse incentives are evident in the case of naturally occurring arsenic. Since 1974, when Congress passed the SDWA, toxicological studies have indicated that arsenic poses a more serious health threat than originally perceived (see e.g., NRC studies 1999, 2001; Hughes et.al., 2007).³ Approximately ten percent of groundwater in the United States has arsenic concentrations exceeding the current 10 ppb drinking water MCL (the drinking water standard) (Welch, 2000). At the time the SDWA was passed, the common assumption in Congress was that its primary source was anthropogenic—and particularly from industrial activity (Congressional Research Service, 1982: p. 93).⁴ What has changed since the passage of the SDWA is that there is greater accumulated data on the widespread distribution of naturally occurring arsenic and toxicological data on its impact on human health (Hughes et.al., 2007). While it may have been questionable in 1974 whether the small water systems Congress exempted from the SDWA faced serious water quality problems, it is now abundantly clear that many of these systems have elevated levels of naturally occurring arsenic. While the federal government has made the arsenic standard in drinking water more stringent for those water systems covered by the SDWA, Congress has done little to protect those small water systems exempted from the SDWA, and, in effect, has exempted them from the public health benefits of the revised standards. Particularly in light of what has been learned about the threat of naturally occurring arsenic, we seek to explain Congress’s inherently inconsistent positions: continually supporting a more stringent arsenic standard for regulated systems while neglecting small water systems that face an identical threat.

The rest of the paper proceeds as follows: Part II gives a brief background of relevant aspects of the SDWA. Part III details active and passive Congressional oversight mechanisms relating to arsenic. Part IV explains the ways in which the structure of the SDWA has raised the costs of collective action for the small water systems implicitly exempted from the Act.

THE SAFE DRINKING WATER ACT

In 1974, Congress passed the SDWA to reduce pollutants in the nation’s drinking water systems and to protect the nation’s underground water resources. According to Congress, the SDWA was supposed “to assure that water systems serving the public meet minimum national standards for protection of public health” (Congressional Research Service, 1982: p. 533). While the SDWA applies to a broad range of pollutants, when Congress passed the SDWA it had in mind a narrower subset of pollutants that were assumed to be much more prevalent in urban areas: human-caused pollutants and particularly those caused by industrial pollution (Congressional Research Service, 1982: p. 93).

The bill Congress ultimately approved implicitly exempted all water systems that served fewer than twenty-five people or fifteen or fewer water connections. With respect to these small systems, some in Congress—particularly a majority of Senators

on the Senate's Committee on Commerce—thought the existence of water quality problems within these systems “remain[ed] inconclusive” (Congressional Research Service, 1982: p. 799). Additionally, many members of Congress who were aware that small water systems faced water quality problems still “felt that Federal regulation should concentrate, at least initially, on the larger water supply systems” (Congressional Research Service, 1982: p. 799). From a practical perspective, Congress's initial focus on these larger systems had two advantages: First, larger systems served most of the country and, second, owing to economies of scale, regulating larger systems proved more cost effective than regulating small systems (Congressional Research Service, 1982: pp. 94, 275). Moreover, particularly in the House, those attempting to pass the SDWA faced some opposition from members representing rural interests or with a strong commitment to what might be labeled “states rights”—such as Congressman Delbert Latta (Ohio), Congressman Phillip Crane (Illinois), and Congressman Abraham Kazen (Texas) (Congressional Research Service, 1982: pp. 643-647). Congressman Crane—one of the most vocal opponents of the SDWA in the House—credited much of his opposition to the SDWA to the fact that officials within Illinois state government had cautioned him that the SDWA would put too great of a burden on small communities (Congressional Research Service, 1982: pp. 644-645).⁵ In fact, a great deal of the opposition that manifested itself grew out of the concern that improving water quality for smaller systems would prove too costly. This concern is best encapsulated by the following comment made on the floor of the House: “One member of our committee was concerned . . . about the local communities not being able to finance some of these things that might be demanded of them and that the language in the original bill was going too far. . . . But we gradually toned it down. . . .” (Congressional Research Service, 1982: p. 649). Such viewpoints culminated into a political compromise that left the smallest water systems unregulated, unmonitored, and untouched by the federal program designed to protect drinking water.

While various factors seem to have driven the exemption of small water systems from the SDWA, it is important to recognize that when Congress passed the Act, it rejected a number of alternatives. In fact, the Senate actually considered including a provision that would have provided the EPA limited regulatory authority over small systems in the instance that the EPA's Administrator found that these systems “pose[d] an unreasonable threat to public health” (Congressional Research Service, 1982: p. 763). Congress, however, ultimately rejected this language and all other policy alternatives that would have provided limited protections to those dependent on small water systems. In doing so, Congress made a giant leap from full regulation under the SDWA to *no regulation at all* of smaller water systems, which resulted in the Act's particular institutional structure whereby small users are implicitly exempted.

Congress has since revisited the SDWA, passing subsequent amendments to the Act in 1986 and 1996. These amendments have required more complete public disclosure of which pollutants are found in the nation's drinking water systems and have pushed the EPA to create more complete and meaningful pollution standards. However, none of these changes have addressed the loophole Congress created for small water systems. The notion that Congress would, through its oversight mechanisms, adjust legislation according to changed circumstances – political or

scientific – has largely been unrealized with regard to naturally occurring arsenic in small water systems not covered under the SDWA.

CONGRESSIONAL OVERSIGHT AND EMERGING THREAT OF ARSENIC TAIKED WATER

Since the passage of the SDWA, a growing body of scientific literature has emerged that illustrates that the small water systems carved out of the SDWA are not immune to water quality problems. To the contrary, such problems commonly occur due to farming practices that include the seepage of manure and fertilizer into water systems. Additionally, small systems face the hurdle of a lack of investment in adequate infrastructure necessary to protect water sources. Perhaps most importantly, increasing evidence exhibits that naturally occurring pollutants, such as arsenic, affect drinking water quality in both urban and rural systems. In fact, because many urban systems rely on surface water and arsenic is much more problematic in groundwater, natural “arsenic tends to occur in higher levels more often in water used by small communities” (Tiemann, 2005: p. 1). Additionally, the more we have learned about arsenic the more it has been proven to be a threat to human health (NRC 1999, 2001). As discussed below, while the federal government has not gone so far as to put in place a zero threshold, the clear trend for Congress (as well as that for the EPA and many of the states) is to push for more rigorous standards for arsenic under the SDWA. However, despite the fact that those relying on small water systems face a similar threat of contamination as those relying on systems covered by the SDWA, Congress has not revisited the SDWA to determine whether it remains sound policy to exclude water systems serving twenty-five or fewer people or fifteen or fewer connections.

The conventional political science theory used to explain congressional oversight relies largely on exposing incentives and principal-agent game theory. The foundational groundwork for this method of evaluating congressional oversight grows out of a literature developed by several papers written in the 1980s, each of which challenged the notion that Congress failed to provide adequate oversight for bureaucratic behavior (Miller, 2005). For instance, Weingast and Moran (1983) explore how Congress uses its committees to control bureaucratic discretion not by monitoring the fine details, but rather by looking at programmatic results. They argue that Congress can afford to overlook the details of regulatory programs if it properly rewards and punishes bureaucrats for delivering overall results. Weingast (1984) builds off this insight and details some of the tools available to Congress to control agencies: competition for appropriations, influence over political appointments, and the threat of oversight hearings and investigations. McCubbins and Schwartz (1984), moreover, argue that to appreciate Congress’s provision of oversight properly, we should conceive congressional oversight broadly. They show that focusing only on Congress’s active oversight (e.g., hearings, commissioned studies, and investigations) neglects a vital component of oversight—passive oversight. Passive oversight enables private actors to remedy their own problems or at least to draw Congress’s attention to any harm suffered (e.g., provision of citizen suits, public participation, and congressional constituent relations services). Moe (1984, 1985, 1987) lays a groundwork that explains how both Congress’s and the Executive’s relationship with agencies makes the environment of agencies a competitive one, where bureaucrats act strategically to gain

favor with other branches. While this literature—sometimes referred to as organizational politics—by no means ends with these foundational works, these works have in large part defined subsequent scholarship.

McCubbins and Schwartz's typology of police patrols and fire alarms is useful for understanding Congress's handling of the SDWA – that is, specifically why Congress has failed to revisit the loophole for small water system. Their typology suggests that Congress's actions flow from their ability to detect problems through active oversight mechanisms (e.g., hearings and investigations), which they refer to as police patrol oversight, and passive oversight mechanisms (citizen suits and constituent relations), which they refer to as fire alarm oversight.

As we parse the details of Congress's oversight, what we find is particularly striking. Because Congress has not expanded the SDWA to those water systems initially carved out of its authority, we should expect that Congress lacked adequate mechanisms to detect the arsenic problem. Yet, to the contrary, many members of Congress have become increasingly aware that naturally occurring arsenic poses a problem for human health that affects small water systems. Rather, Congress has simply failed to respond to what it knows about this threat. Some may argue that it is difficult for Congress to react because they are a "they" and not an "it"—which creates what could be termed a "congressional collective action" problem. However, we emphasize that up to this time even *individual* members of Congress have failed to act, as we have been unable to find any proposed amendments to the SDWA that would close off the small water system loophole.

It is surprising that members of Congress, in the context of small water systems, have failed to respond to the risk of naturally occurring arsenic in a meaningful way. We have seen in various other contexts—including the SDWA's regulation of larger water systems—that arsenic in drinking water has had a much greater political salience (Sunstein, 2002). Perhaps the best example was in 2001 when President George W. Bush's administration considered rolling back a more stringent arsenic standard that President Clinton's administration put into place at the close of its term (EPA, 2001). A political firestorm erupted: national papers condemned President Bush (Fialka, 2001; Musil, 2001); opinion polls taken at the time reflected intense public opposition to the President's action (Barabak, 2001); the House of Representatives—then controlled by Bush's own party—rebuked the President and voted to retain President Clinton's more stringent standard (Shogren, 2001).

We now know that naturally occurring arsenic has an impact upon a large number of water systems across the country, including those unregulated by the SDWA. As such, it would seem that this new awareness of risk would set off "fire alarms," which would invoke Congressional attention and action. Such alarms should be significant enough that at least some members of Congress would attempt to expand the SDWA's protections to rural water systems. Instead, we find that Congress has simply not acted.

Congressional inactivity is perplexing given that the structure of the SDWA employs a number of measures that work to provide Congress with various fire alarms. The initial bill and its subsequent amendments and reauthorizations have included provisions (e.g., deadlines, sunset provisions of parts of the statute, and limited authorizations) that force Congress to revisit the SDWA periodically. By revisiting an enactment, Congress creates a window of opportunity for those interested in pushing

change. Another opportunity for passive oversight is that both chambers of Congress have standing committees that are generally charged with SDWA oversight - for example, the Senate's Environment and Public Works Committee and the House's Committee on Energy and Commerce. Members of these committees—along with their office staffs—may serve as a gateway for those interested in change to convey their message to Congress.

Also, the structure of the SDWA creates a number of potential avenues for fire alarm oversight in addition to those provided by Congress. The SDWA delegates administration of the Act to the individual states and to a lesser extent to the EPA. In this regard, Congress's direct interactions with state and EPA administrators are the most obvious provision of fire alarm oversight. The EPA has informed Congress of the failure of small water systems—both those regulated by the SDWA and those exempted from federal regulation—to provide safe drinking water. In fact, even before Congress passed the SDWA, representatives from the EPA testified before Congress about challenges facing small water systems. In doing so, one official from the EPA described pervasive water quality problems across the country and then noted, “[i]n the majority of cases, these deficient systems are smaller systems serving smaller communities” (Congressional Research Service, 1982: p. 737). Over the past three decades, it has become clear that many small water systems still suffer from chronic water quality problems. In fact, the smallest water systems actually covered by the SDWA make up the vast majority of systems which remain in noncompliance with the Act (Copeland, 2007: p. 2; EPA, 1999: p. iii).

Even though the EPA and most states do not regulate water systems left unregulated by the SDWA, the federal government and a number of states have provided some form of public warnings regarding the dangers of relying on those drinking water systems, including the risks posed by naturally occurring arsenic (EPA, 2003; Center for Disease Control, 2003; Maine Bureau of Health, 2002). While warnings on websites, brochures, and reports do provide a modest signal, the warnings do not proportionally correlate to the sense of urgency with which the EPA is adopting increasingly stringent arsenic regulations for water systems covered by the SDWA. Additionally, as highlighted above, some states—like North Carolina and New Jersey—have conveyed the message to rural water users that the federal standards are too lax. For example, while the EPA lowered the arsenic drinking water standard from 50 ppb to 10 ppb, the New Jersey Department of Environmental Protection recently adopted an even more stringent arsenic standard of 5 ppb (New Jersey Geological Survey & Bureau of Safe Drinking Water, 2005). The North Carolina Department of Public Health has gone even further, recommending that levels of arsenic in private wells should not exceed 0.02 ppb.⁶ These states have suggested that water systems of all sizes apply more stringent rules and/or recommendations than the federal standard and have thereby created a potential avenue for state led pressure on the federal government to act. However, despite individual state efforts to take a more precautionary approach, standard raising only directly benefits regulated systems since it fails to bring unregulated systems into the ambit of the SDWA. This is especially important since the EPA itself has recognized that state efforts to address contamination issues are often ineffectual. An EPA guidance document notes that citizens

should be aware [of contaminants] because the Safe Drinking Water Act does not protect private wells. EPA's rules only apply to 'public drinking water systems' . . . supplying water to 25 people or 15 service connections. While most states regulate private household wells, most have limited rules. Individual well owners have primary responsibility for the safety of water drawn from their wells. They do not benefit from the government's health protections for water systems serving many families (Environmental Protection Agency, 2002: p. 8).

EPA's assertion makes it clear that Congress's direct interactions with state and EPA administrators as a form of fire alarm oversight has largely failed to compel Congress to act.

Congress has also provided some active oversight mechanisms to help it recognize the threats posed by arsenic and the vulnerabilities of those reliant on small water systems. Perhaps Congress's most aggressive police patrol oversight intended to monitor small water systems arises in the form of Congress's statutory mandates that the EPA complete studies regarding the challenges facing small water systems. In fact, when Congress passed the SDWA, it included a measure that required the EPA to perform a survey of rural drinking water supplies, including those systems with fifteen or fewer connections or serving twenty-five or fewer people (Congressional Research Service, 1982: pp. 396-397). Since then the EPA has highlighted problems related to small water systems, including those water systems not regulated by the SDWA (EPA, 2003; 1999). The Congressional Research Service has also provided Congress information related to the threat of arsenic in drinking water (Copeland, 2007; 1999). Furthermore, Congress has conducted regular hearings and has reexamined the SDWA periodically. These actions actually led to substantial revisions of the Act in 1986 and again in 1996, such as the requirement that the EPA set pollution standards for a broader range of pollutants and the requirement that those water systems with poor water quality provide its users notice of its problems in "community confidence reports."

However, despite the establishment of both active and passive oversight mechanisms, Congress has failed to act in any meaningful way to the arsenic problem. Should we then conclude that Congress's traditional oversight mechanisms were insufficient to alert Congress to the threat of naturally occurring arsenic in those systems exempted by the SDWA? The problem with this notion is that many members of Congress have made comments illustrating that they are actually aware of the risk of naturally occurring arsenic in drinking water, and have further noted the SDWA's exclusion of a substantial number of Americans from the protections provided by the Act. For example, in 2002, Senator Jack Reed (RI) introduced the Private Well Testing Assistance Act, which would have provided funding for testing wells outside the coverage of the SDWA for dangerous pollutants (U.S. Senate, 2002). In introducing this legislation, Senator Reed noted that millions of Americans relied on such water systems, but that there was cause for concern for a range of pollutants in these systems – including naturally occurring arsenic. Another example of Congress member awareness of the arsenic problem arose out of President Bush's aforementioned attempt to roll back the more stringent arsenic standard (Reed, 2002). The House attached a rider to an appropriations bill that required the EPA to retain the more stringent arsenic standard. In doing so, the Senate Conference Report noted that the more stringent standard would place pressure on smaller communities and water

systems that suffered from a contamination problem and that the EPA should still consider this pressure a matter of concern (U.S. House, 2001: p. 174). Moreover, several members of Congress, in explaining their support or opposition to President Bush's position, did so while pointing out the problem of naturally occurring arsenic (Reid, 2001; Gibbons, 2001; Walsh, 2001). However, it does not appear that *any* member of Congress has proposed extending the SDWA to cover *any* of the water systems exempted from the Act.

In short, Congress's failure to close off the loophole in the SDWA contradicts what would be the expected result given the oversight mechanisms it established to identify the problem. Over the past three decades, the federal government has continually recognized arsenic as a threat to drinking water quality. In fact, most members of Congress stood behind the EPA's decision to put into place a much more stringent arsenic standard and resisted when the EPA considered rolling back that standard. At the same time, monitoring required by the Act has shown that smaller water systems are far from the pure water sources some in Congress assumed they were when Congress passed the SDWA. In fact, as noted above smaller water systems regulated by the Act are more likely to have chronic water quality problems. We found no evidence indicating that the same is not true for those water systems exempted from the Act's coverage. Perhaps most importantly, Congress seems to have been put on notice to the problem. Yet, it appears that no member of Congress has even proposed extending the SDWA to cover the small water systems Congress exempted from the Act upon its passage in 1974.

INSTITUTIONAL DESIGN AND TRANSACTION COSTS

Why has Congressional oversight failed to extend the SDWA to those populations initially carved out of the SDWA's reach? By digging a little deeper into the empirical evidence, we find that Congress's design for SDWA implementation actually has made it *more* difficult to protect water systems left unregulated in 1974. Such problems of institutional design creep into the picture from several sources.

First, by creating a loophole that allows a subset of water systems to escape regulation, Congress not only let the smallest water systems "off the hook" but also created a potential refuge for those it does regulate to potentially escape SDWA coverage. The size of a water system is obviously not an immutable characteristic. Particularly for the smallest water systems covered by the SDWA, when compliance becomes expensive, the option of downsizing and walking away from the federal legislation might be a realistic alternative to compliance.

For example, as the Bush Administration weathered the storm caused by its proposed rollback of the arsenic standard, Administrator Christine Todd Whitman made the following observation:

We have seen instances, particularly in the West and Midwest, where arsenic is naturally occurring at up to 700 and more parts per billion, where the cost of remediation has forced water companies to close, leaving people with no way to get their water, save dig wells. And then they are getting water that's even worse than what they were getting through the water company (Sunstein, 2003: p. 1025).

Congress too seems to understand that a more stringent arsenic standard may push some water systems to consider leaving the federal system. Even as Congress rebuked the Bush Administration for considering reverting to a less stringent arsenic standard, it attempted to grapple with this potential problem. The aforementioned appropriations rider passed by the House reflects this:

The conferees are concerned that, because of their complexity, the current waiver and exemption provisions found in sections 1415 and 1416 of the Safe Drinking Water Act, as amended, may not provide sufficient flexibility for the small communities to receive additional time to reach compliance. As a result, the conferees are very concerned that numerous small community water systems may not be in compliance by 2006, and that some very small communities may abandon their municipal systems in favor of untreated and unregulated private wells which could create significant other health risks for these communities (U.S. House, 2001: p.174).

The consequence of these two examples and others like them is that when Congress exempted water systems below a certain size, it created an unanticipated incentive for those regulated by the SDWA to seek to ensure that the exemption to the federal program remains in place. Regulated systems may see the perceived advantage of belonging to an unregulated system as a potential way out of federal regulation if the SDWA becomes too burdensome. This unintended consequence may even provide regulated systems some leverage within SDWA enforcement proceedings (i.e., require too much of me and I will downsize and walk away from the federal program). Additionally, to the extent that water users have reconfigured their water systems to avoid federal regulation, it seems clear that they have little reason to sign up again at a later date. As such, a number of water users have come to value—if not rely on—the existence of unregulated areas to escape the federal program or at least use it to their advantage. These factors combine to entrench those outside the ambit of the federal legislation continually outside and to inhibit Congress from revisiting its decision to create a loophole for small water systems.

Second, the monitoring and reporting required by the SDWA has adequately raised awareness of the problems of regulated water systems even as the problems of unregulated systems remain obscured and unaddressed. Congress has viewed public disclosure as an important tool to promote compliance with the SDWA. In fact, the 1996 amendments to the SDWA resoundingly validated the use of full disclosure by mandating that water systems produce and distribute “consumer confidence reports,” which provide water users with detailed information about their system’s water quality, violations of the SDWA, and associated health risks associated with these violations. When water users read and understand these reports, it potentially creates public pressure to remedy water quality problems. Also, for those in charge of operating water systems, the SDWA provides an incentive to fix problems and thereby avoid having to continually deliver bad news to water customers and regulatory agencies. In contrast, those water systems not regulated by the SDWA—in the vast majority of cases—go untested and the water users reliant on those systems often live in ignorance about potential problems related to their drinking water. Maine’s Cooperative Extension of its Department of Agriculture frames the problem this way: “Most people living in rural areas with limited industry expect their home well water quality to be excellent Yet,

in many areas of Maine, poor water quality is common” (University of Maine Cooperative Extension, 1999). Ignorance of the problem is particularly true of naturally occurring arsenic, because even at highly dangerous levels it is difficult to detect arsenic based on the taste or appearance of the water. So, when water quality problems exist, many of those reliant on small systems exempted by the SDWA may fail to perceive the threat of naturally occurring arsenic. As such, the people relying on small systems never perceive a need to alert authorities or to lobby Congress to provide them greater protection by readdressing the scope of the SDWA. Additionally, while experts might be able to make an educated guess about what systems are more or less likely to have problems with naturally occurring arsenic based on location, to this point their methodological precision is compromised without individual examinations of each water system. This monumental task has barely even begun, and will be extremely difficult without the help of congressional funds.

There is yet another practical consequence arising out of the stark contrast between what we know about the drinking water delivered by systems covered by the SDWA and our ignorance about water delivered by systems exempted from the Act: small water systems not covered by the Act are losing out on federal funding to address drinking water pollution problems that Congress funnels through the SDWA. As discussed previously, the SDWA requires water systems regulated by the SDWA to provide transparency as to the risks associated with their drinking water. Disclosure can lead to calls for action to remedy water quality problems—sometimes a very expensive proposition. So not surprisingly, systems covered by the SDWA are continually seeking federal funds to address contamination issues. In addition to a host of “pork barrel” projects attached to larger appropriations bills, as part of the 1996 amendments to the SDWA, Congress created a substantial source of funding to assist SDWA water systems in complying with the Act’s dictates. Through this program, Congress has funneled billions of dollars to assist water systems covered by the Act (Tiemann, 2006: p. 10). Furthermore, in attempting to promote compliance, the EPA helps those systems it regulates to access a range of federal grants both within and outside the Agency (Tiemann, 2006: p. 17). In contrast, while local governments or managers of small water systems could petition the federal government for general funds to address their naturally occurring arsenic problem, it is apparent that they have not done so with nearly the same fervor of those regulated by the SDWA. Again, this is probably due to their ignorance of naturally occurring arsenic or about the existence of and means by which they may access federal funding. Indeed, the path to federal funding for systems exempted from the SDWA is circuitous, often requiring a small system to secure a separate appropriation or a new piece of federal legislation, something fairly difficult to pursue for water systems that serve fewer than twenty-five people.

The way the SDWA is administered has also made it more difficult for those water systems exempted from the Act to lobby Congress for the protections provided by the Act. The burden of the SDWA has given unregulated water systems reason to question the attractiveness of the federal program. This is true even if users of these exempted water systems value increasing the safety of their drinking water. They could point to complaints that the SDWA places an undue burden on the small water systems that it regulates, that it represents an unfunded mandate, and that due to the lack of

economies of scale it is very difficult for small water systems to comply with the Act (Congressional Budget Office, 1995: p. 1; Tiemann, 1996; Congressional Research Service, 1982: p. 275). Even if exempted water users desire some federal assistance, they might fear that the help offered would come in the form of regulation unaccompanied by the necessary funds to achieve compliance.

Simply, the costs of changing federal policy vastly outweigh the costs of changing individual systems. This is especially true since documented occurrences of natural arsenic contamination are inherently local: characterized by localized—and treatable—hotspots. If a party receives water from a system outside of those sources regulated by the SDWA, and a water quality problem is discovered, it seems likely that in the vast majority of cases it will be cheaper for users of an individual water system to fix the problems with the system—or even ignore them—than it would be for these users to push for reform of federal law. Changing federal law would likely entail galvanizing large numbers of small actors that already lack information about each other to overcome those who stand in the way of closing off the federal loophole, and about whom even less is known. In addition, the issue of which areas of the country are actually affected by arsenic contamination complicates collective action even further. Different areas of the country rely in varying degrees on private wells for drinking water, and some areas are also more prone to natural arsenic formation than others. For instance, Maine and New Jersey are states with high levels of natural arsenic occurrence. However, while 56% of Maine residents rely on drinking water from private wells, 12% of New Jersey residents do so.⁷ As such, state and local efforts to collaborate and pressure Congress on the issue face complex logistical hurdles. Given the burden of overcoming the collective action problems related to altering the SDWA—particularly the uncertain “solution” that would emerge from such efforts—the most sensible path often is simply to ignore the risk or treat the problems with one’s water system and leave the problems of the SDWA untouched.

CONCLUSION

This article has illustrated that despite a growing body of evidence concerning the threats of naturally occurring arsenic, Congress has done little to address the SDWA loophole that leaves millions of Americans reliant on water systems outside of the protections provided by the federal Act. McCubbins and Schwartz’s typology of congressional oversight of fire alarms and police patrols would suggest that perhaps Congress has not employed enough passive and active oversight mechanisms to appreciate the seriousness of the problem. However, we found that many current members of Congress and members of Congress at the time of the Act’s passage, grasped the severity of the problem but have made no effort to address it.

While Congress has taken substantial steps to address arsenic in larger systems, arsenic still remains an unaddressed threat to millions of small-users. In significant part, this is a perverse incentive created by the structure of the SDWA, which has over time facilitated an increase in the costs of collective action that stand in the way of protecting those who have slipped through the cracks of federal regulation. Furthermore, those regulated by the Act have an incentive to keep small systems unregulated because it provides them a potential haven to escape regulation.

The SDWA has also created a vast information chasm between those regulated by the SDWA and those exempted. Those reliant on unregulated water systems for the most part have no idea that they may be drinking arsenic-tainted water by the glass full. In contrast, those subject to the SDWA—due to the SDWA’s monitoring and disclosure requirements—have become acutely aware of the contents of their water and also wish to avoid penalties that will follow noncompliance with the SDWA. This has led those regulated by the SDWA to dominate both the attention and purse of Congress as it attempts to address the arsenic problem. While water systems generally receive relatively little federal funding, it appears that those regulated by the SDWA—i.e. those who know to ask for funds—take home all the benefits that Congress is willing to confer on water users. Meanwhile, those who do not even know to ask for help are left detrimentally affected by the *exact same contamination* as their regulated peers.

In sum, models of congressional oversight seem to overlook a very simple insight: detection of problems is not enough. Detection is potentially irrelevant unless Congress is willing to act on new information which manifests through the detection process. Unless we are willing to live with a definition of oversight that limits Congress to appreciating a problem rather than taking a responsible step to resolve it, the conventional wisdom that police patrols and fire alarms are enough seems to be incomplete. At the very least, we need to realize that decisions made in the past, very often limit options in the future (North, 1990). Because the SDWA has altered the political landscape and has, in fact, raised the transaction costs of political change for those outside of the Act’s reach, the police patrols and fire alarms in place do not seem to be working. Thus in 1974, when Congress decided not to regulate the smallest water systems, it may have meant to create a loophole. However, time has shown that loophole may in fact serve an unintended purpose. It seems that this loophole may also be a noose.

REFERENCES:

- Adelman, D. E. & J. H. Barton. (2002). Environmental regulation for agriculture: Towards a framework to promote sustainable intensive agriculture. *Stanford Environmental Law Journal*, 21, 3-43.
- Barabak. (2001). LAT poll shows plurality supports Bush on environment but disagrees with arsenic, Kyoto decisions. *Los Angeles Times*. (April 30).
- Center for Disease Control. (2003). Fact sheet: arsenic and drinking water from private wells. Washington: Government Printing Office (Last retrieved December 24, 2007, from <http://www.cdc.gov/ncidod/dpd/healthywater/factsheets/pdf/arsenic.pdf>).
- Congressional Budget Office. (1995). *The Safe Drinking Water Act: A case study of an unfunded federal mandate*. (Washington: Government Printing Office).
- Congressional Research Service, Environment and Natural Resources Policy Division. (1982) *A legislative history of the Safe Drinking Water Act*. (Washington: Government Printing Office).
- Copeland, C. (2007). Rural water supply and sewer systems: Background information. (Washington: Congressional Research Service).
- Copeland, C. (1999). Rural water supply and sewer systems: Background information. (Washington: Congressional Research Service).

Environmental Protection Agency. (2003). *Water on tap: What you need to know*. (Washington: Environmental Protection Agency).

Environmental Protection Agency. (2002). *Drinking water from household wells*. (Washington: Environmental Protection Agency).

Environmental Protection Agency. (2001). National primary drinking water regulations; Arsenic and clarifications to compliance and new source contaminants monitoring. *Federal Register* 66:78 (23 April) p. 20580.

Environmental Protection Agency. (1999). National characteristics of drinking water systems serving populations under 10,000. (Washington: Environmental Protection Agency).

Fialka, J. J. (2001). Arsenic and wild space: Green activists from across spectrum unite against Bush. *Wall Street Journal*. (April 11), sec A20.

Gibbons, Rep. [NV]. Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act. *Congressional Record – House* 147:4748 (27 July 2001).

Hughes, M.F., E. M. Kenyon & K. T. Kitchin. (2007). Research approaches to address uncertainties in the risk assessment of arsenic in drinking water. *Toxicology and Applied Pharmacology*.

Jehl, D. (2001). E.P.A. to abandon new arsenic limits for water supply. *New York Times*. (March 21).

Maine Bureau of Health. (2002). Have you tested your well for Arsenic. Augusta: Department of Human Services (Last retrieved December 24, 2007 from <http://www.maine.gov/dhhs/eohp/wells/documents/ASBROCH3.pdf>).

McCubbins, M. D. & T. Schwartz. (1984). Congressional oversight overlooked: Police patrols versus fire alarms. *American Journal of Political Science*, 28(1), 165-179.

Miller, G. J. (2005). The political evolution of principal-agent models. *Annual Reviews Political Science*. 8, 203–25.

Moe T. M. (1987). Interests, institutions and positive theory. (In K. Orren & S. Skowronek (Eds.), *Studies in American political development*, ed., 2 (pp. 236–99). New Haven, CT: Yale Univ. Press).

Moe, T. M. (1985). Control and feedback in economic regulation: the NLRB. *American Political Science Review* 79, 1094–16.

Moe, T. M. (1984). The new economics of organization. *American Journal of Political Science* 28, 739–77.

Musil, R. K. (2001). Arsenic on tap. *New York Times*, April 24, sec A18.

New Jersey Geological Survey & Bureau of Safe Drinking Water. (2005). Arsenic water treatment for residential wells in New Jersey. Trenton: Department of Environmental Protection (Last retrieved on December 24, 2007 from http://www.nj.gov/dep/pwta/Arsenic_Treatment.pdf).

North, D. C. (1990). *Institutions, institutional change, and economic performance* (Cambridge, UK: Cambridge University Press).

National Research Council, (2001). *Arsenic in drinking water*. (Washington, DC, National Academy Press)

National Research Council, (1999). *Arsenic in drinking water*. (Washington, DC, National Academy Press)

Reed, Sen. [RI]. Statements on Introduced Bills and Joint Resolutions. *Congressional Record – Senate* 148:10678 (17 October 2002).

Reid, Sen. [NV]. Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act. *Congressional Record – Senate* 147:8557 (1 August 2001).

Reid, J. C., C. G. Pippin, W. T. Haven . Assessing the source for arsenic in groundwater, North Carolina Piedmnt. (Last retrieved March 3, 2008 from <http://h2o.enr.state.nc.us/gwp/documents/ArsenicstudyReidetel.pdf>).

Shogren, E. (2001). House OKs measure to cut Arsenic in water. *Los Angeles Times*, July 28, sec A1.

Sunstein, C. R. 2003. Beyond the precautionary principles. *University of Pennsylvania Law Review* 151, pp. 1003-1058.

Sunstein, C. R. 2002. The arithmetic of arsenic. *Georgetown Law Journal* 90, pp. 2255-2303.

Tiemann, M. (2006). Safe Drinking Water Act: Issues in the 109th Congress. (Washington: Congressional Research Service).

Tiemann, M. (2005). Arsenic in drinking water: regulatory developments and issues. (Washington: Congressional Research Service).

Tiemann, M. (1996). Safe Drinking Water Act: Implementation and reauthorization. (Washington: Congressional Research Service).

U.S. House. Committee of Conference. Making Appropriations for the Department of Veterans Affairs and Housing and Urban Development, and for Sundry Independent Agencies, Boards, Commissions, Corporations, and Offices for the Fiscal Year Ending September 30, 2002 and for Other Purposes. (H. Rpt. 107-272). Washington: Government Printing Office, 2001.

U.S. Senate. 107th Congress, 2nd Session. S. 3127, Private Well Testing Assistance Act of 2002. ONLINE. GovTrack. Available: <http://www.govtrack.us/congress/billtext.xpd?bill=s107-3127> [10 October 2002].

University of Maine Cooperative Extension. (1999.) Fact Sheet #2: Home Well Water Quality. Augusta: Department of Agriculture.

Walsh, Rep. [NY]. Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act. *Congressional Record – House* 147:4743-4744 (27 July 2001).

Weingast B.R. (1984). The Congressional bureaucratic system: A principal-agent perspective (with applications to the SEC). *Public Choice* 44, 147–88.

Weingast, B. R. & M. J. Morgan. (1983). Bureaucratic discretion or Congressional control? regulatory policymaking by the Federal Trade Commission. *Journal of Political Economy*, 91, 765-800.

Welch, A. H., Westjohn D.B., Helsel D.R., & Wanty R.B. (2000). Arsenic in groundwater of the United States: occurrence and geochemistry. *Ground Water* 38, 589-604.

¹ This work was supported by U.S. Department of Agriculture Cooperative State Research Education and Extension Service Grant NCW-2006-03956. The authors share equal responsibility for the content and analysis herein. An earlier version was prepared for the IASC 2007 conference and was subsequently presented at the 2008 International Studies Association Conference.

² 42 USCS § 300f(5). Additionally, we say ‘implicitly exempts’ because the SDWA only expressly applied to water systems that served at least this number of connections. In the remainder of the paper we intend “exempts” to mean “implicitly exempts.”

³ The NRC study found that the prior standard of 50 ppb could lead to a 1-in-100 risk of cancer (Jehl 2001).

⁴ This reference includes congressional materials (e.g., bills, speeches, and committee reports) from the 1970s into the beginning of the 1980s.

⁵ In fact, resistance to environmental laws in the 1970s from rural interests generally, and agriculture specifically, resulted in widespread exceptions and loopholes in most environmental laws passed by Congress at the time (Adelman & Barton, 2002).

⁶ The NC state toxicologist has made this recommendation. See Reid et.al.

⁷ For details, see Main Department of Health and Human Services’ report on Healthy Maine 2010.