



U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF INSPECTOR GENERAL

Enforcement and Compliance

Drinking Water: EPA Needs to Take Additional Steps to Ensure Small Community Water Systems Designated as Serious Violators Achieve Compliance

Report No. 16-P-0108

March 22, 2016



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Abbreviations

DOH	Puerto Rico Department of Health
EPA	U.S. Environmental Protection Agency
ERP	Enforcement Response Policy
FY	Fiscal Year
GAO	U.S. Government Accountability Office
KDHE	Kansas Department of Health and Environment
OECA	Office of Enforcement and Compliance Assurance
OIG	Office of Inspector General
SDWA	Safe Drinking Water Act
TCEQ	Texas Commission on Environmental Quality

Cover photo: Drinking water storage tanks in a community water system in Puerto Rico that lack functioning chlorination equipment. (EPA OIG photo)

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At a Glance

Why We Did This Review

We initiated this review to determine how the U.S. Environmental Protection Agency (EPA) helps states and territories ensure that small community water systems with serious violations come into compliance with health-based standards and Safe Drinking Water Act (SDWA) requirements.

Small community water systems provide drinking water to 3,300 or fewer residents year-round. These 42,199 systems represent 82 percent of the community water systems in the United States and serve an estimated 24.4 million people. This evaluation focused on Puerto Rico, Texas and Kansas, located within EPA Regions 2, 6 and 7, respectively.

This report addresses the following EPA goals and cross-agency strategies:

- *Protecting America's waters.*
- *Protecting human health and the environment by enforcing laws and assuring compliance.*
- *Launching a new era of state, tribal, local, and international relationships.*

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Drinking Water: EPA Needs to Take Additional Steps to Ensure Small Community Water Systems Designated as Serious Violators Achieve Compliance

What We Found

EPA efforts to bring small systems into compliance through enforcement and compliance assistance resulted in some improvement over time. In October 2011, the EPA classified 2,252 small community water systems as serious violators, including 193 systems with Tier 1 violations. Tier 1 violations reflect the most serious public health-related violations, and require public notification to customers within 24 hours. The 84 systems in Puerto Rico, Texas and Kansas represented 45 percent of the 193 serious violators with Tier 1 violations identified in 2011.

The EPA can better protect the public from contaminated drinking water, including nearly 200,000 people in Puerto Rico still lacking safe drinking water.

For these 193 systems, within 3 years, 43 of those systems (or 22 percent) had returned to compliance. However, for the 84 systems in Puerto Rico, Texas and Kansas, only 14 percent had returned to compliance; 72 systems (86 percent) remained noncompliant as of April 2015. We reviewed 10 systems in each of the three locations. Each system faced specific challenges that made compliance difficult. In many cases, the EPA and states applied enforcement and compliance tools at their disposal to help the systems. Four systems attained compliance and several others made progress. However, at systems where serious noncompliance persisted, the EPA and states need to engage in a long-term, system-specific approach to bring about compliance.

Across the three regions, we found inconsistencies in adherence to the EPA's Enforcement Response Policy. Within our sample, 10 of the systems never received a formal enforcement order, only three of 20 enforcement orders met the timeliness standard in the Enforcement Response Policy, and few cases were escalated by the EPA or state when noncompliance persisted. Without assurance that necessary enforcement action has been taken, human health risks may continue at these small community water systems.

Recommendations and Planned Agency Corrective Actions

We recommend that the Regional Administrator for Region 2 coordinate the multiple efforts underway in Puerto Rico to improve compliance at priority systems and track whether public notice is distributed to customers. We recommend that the Regional Administrator for Region 7 take steps to ensure compliance with the Enforcement Response Policy. Further, we recommend that the Assistant Administrator for Enforcement and Compliance Assurance require regions to provide annual justification for the lack of formal enforcement action as appropriate, and to establish a coordinated Action Plan for achieving workgroup goals that draws on expertise and tools across the agency, including inviting other federal agencies. The agency agreed with all of our recommendations and proposed adequate corrective actions. All report recommendations are resolved.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

THE INSPECTOR GENERAL

March 22, 2016

MEMORANDUM

SUBJECT: Drinking Water: EPA Needs to Take Additional Steps to Ensure Small Community Water Systems Designated as Serious Violators Achieve Compliance
Report No. 16-P-0108

FROM: Arthur A. Elkins Jr.

A handwritten signature in black ink, appearing to read "Arthur A. Elkins Jr.", is written over the printed name.

TO: Cynthia Giles, Assistant Administrator
Office of Enforcement and Compliance Assurance

Judith Enck, Regional Administrator
EPA Region 2

Mark Hague, Regional Administrator
EPA Region 7

This is a report on the subject evaluation conducted by the Office of Inspector General (OIG) of the U.S. Environmental Protection Agency (EPA). This report contains findings that describe the problems the OIG has identified and corrective actions the OIG recommends. This report represents the opinion of the OIG and does not necessarily represent the final EPA position. Final determinations on matters in this report will be made by EPA managers in accordance with established audit resolution procedures.

The EPA's Office of Enforcement and Compliance Assurance (OECA) and Regions 2 and 7 have responsibility for implementing the recommendations in this report.

Action Required

In accordance with EPA Manual 2750, OECA, Region 2 and Region 7 provided planned corrective actions in response to the OIG recommendations. All recommendations are considered resolved. Region 7 needs to provide a written response to the final report within 60 calendar days. Region 7's response should be provided as an Adobe PDF file that complies with the accessibility requirements of Section 508 of the Rehabilitation Act of 1973, as amended. The final response should not contain data that Region 7 does not want to be released to the public; if the response contains such data, Region 7 should identify the data for redaction or removal, along with corresponding justification. A final response from OECA and Region 2 is not required, but can be submitted, and will follow the same protocol described for Region 7's final response. Region 7's response and any additional responses from OECA and Region 2 will be posted on the OIG's public website, along with our memorandum commenting on their response.

We will post this report to our website at www.epa.gov/oig.

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Introduction

Why We Did This Review

We conducted this review to determine how the U.S. Environmental Protection Agency (EPA) helps states and territories ensure that small community water systems with serious violations come into compliance with the health-based standards and treatment requirements of the Safe Drinking Water Act (SDWA). This evaluation focused on Puerto Rico, Texas and Kansas, located within EPA Regions 2, 6 and 7, respectively.

Background

The SDWA authorizes the EPA to establish national health-based standards to protect the public from contaminants that may be found in drinking water.

Potential Health Effects From Drinking Water Contaminants

Bacteria can cause illnesses such as hepatitis or cholera, and symptoms such as diarrhea, cramps, nausea, jaundice, headaches and fatigue.

High levels of *lead* and *copper* may cause liver or kidney damage. Long-term lead exposure in adults can lead to nervous system problems, reproductive damage, brain and kidney damage, and can ultimately cause death.

High levels of *nitrate* are harmful to infants below the age of 6 months, and may cause a serious illness known as blue-baby syndrome, which (if left untreated) can cause death.

High levels of *arsenic* may cause cancer of the bladder, lungs, skin, kidney, nasal passages, liver and prostate with long-term exposure. Non-cancer consequences of ingesting arsenic include cardiovascular, pulmonary, immunological, neurological and endocrine (e.g., diabetes) effects.

Contaminated drinking water may cause cancer and other serious health effects, such as reproductive problems, birth defects or adverse environmental effects. In a 2013 report,¹ the EPA estimated that community drinking water systems with at least one violation of a health-based standard serve 6 percent of U.S. children. Noncompliant community drinking water systems exposed 2 percent of these children to total coliforms, which indicate the potential presence of harmful bacteria associated with infectious illnesses.

States and territories largely serve as the primary drinking water program administrators where the EPA has granted them primary enforcement authority under SDWA.² However, the EPA retains overall responsibility for national implementation of the SDWA and oversees state administration and enforcement.

¹ EPA, America's Children and the Environment, Third Edition. Updated October 2015.

² Primacy is granted to states that adopt regulations at least as stringent as national requirements, develop adequate procedures for enforcement (including conducting monitoring and inspections), adopt authority for administrative penalties, and maintain records and make reports as the EPA may require.

SDWA standards apply to all of the approximately 51,000 community water systems in the United States. Of these, the EPA classifies 42,199 as “small and very small³ community water systems” because they provide drinking water to 3,300 or fewer residents year-round. These small systems represent 82 percent of the community water systems in the United States and serve an estimated 24.4 million people.

SDWA requires that community water systems periodically monitor for contamination throughout the system (i.e., at the treatment plant, in the distribution system, and at customer taps) and report their results to the state. When monitoring results show that drinking water exceeds a health-based standard, the water system must notify all of its customers about the contamination and any adverse health effects that may occur, and must take steps to correct the problem. The SDWA classifies violations into two categories:

- Health-based violations.
- Non-health based violations (e.g., monitoring and reporting violations).

To ensure that skilled professionals oversee the treatment and distribution of safe drinking water, the 1996 amendments to the SDWA directed the EPA to issue program guidelines specifying minimum standards for system operator certification and recertification.

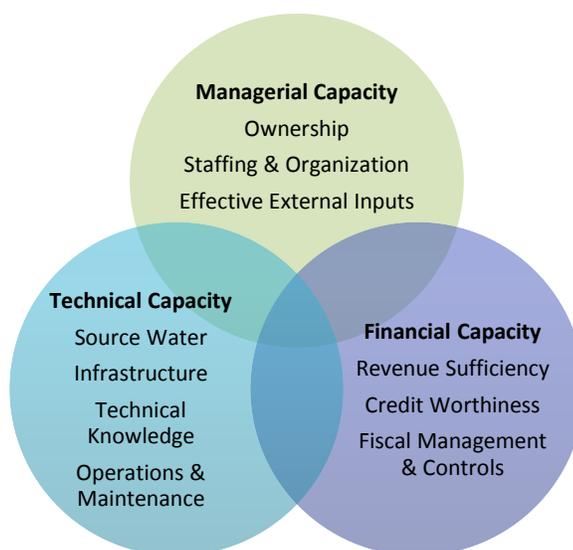
Barriers to Compliance at Small Community Water Systems

Drinking water systems that serve 3,300 or fewer customers face a wide array of challenges in providing safe, reliable and affordable drinking water to their customers. These challenges include adapting to new regulatory standards, the need to upgrade or replace aging infrastructure, source water availability and protection issues, and increasing budgetary constraints.

Drinking water systems must have adequate capacity to undertake technical, managerial and financial duties to assure the sustainability of the water system and to maintain compliance with all applicable drinking water laws and regulations, as illustrated in Figure 1.

³ EPA classifies water systems according to the number of people they serve: very small systems serve 25 to 500 people while small systems serve between 501 to 3,300 people. Throughout the report, we simply refer to both small and very small systems as “small” systems.

Figure 1: Drinking Water Capacity



Source: Office of Inspector General (OIG) modification of EPA diagram.

Compared with larger water systems, small water systems are less likely to have the technical capacity required to properly monitor their water for contaminants, make timely repairs or replace faulty materials. This can lead to poor water quality, water system unreliability or failing water system infrastructure, all of which can pose significant public health risks to customers. Small water systems violate SDWA standards more often than their larger counterparts. Further, due to limited resources, owners and board members at smaller systems may not have the managerial expertise to ensure the safe and reliable delivery of drinking water. These operational and managerial shortcomings reflect the financial limitations small systems face. By serving smaller populations, fewer rate payers bear the costs of system operations, maintenance, upgrades and compliance. Relatively higher per-capita costs may be required for small systems to meet regulatory requirements because fewer customers share the expenses.

In part to help address challenges drinking water systems face, the 1996 SDWA amendments required states to incorporate technical, managerial and financial capacity into public water system operations through training and capacity development programs. Because each system has a unique combination of capacity barriers, achieving compliance may require a unique combination of assistance tools.

EPA Approach to Addressing Small System Noncompliance: Enforcement and Compliance Assistance

The EPA and state or territory primacy agencies use both enforcement and non-enforcement methods to return small community systems to compliance with all health-based, monitoring and reporting, and public notification standards.

Enforcement provides legal leverage, while compliance assistance helps systems address the underlying challenges that serve as barriers to compliance. If a water system's violation resulted from a lack of technical, managerial or financial capacity, enforcement alone may not bring the water system back into compliance. Based in part on the EPA's work under the Enforcement Response Policy (ERP), the number of small community water systems designated as serious violators decreased from 3,908 in fiscal year (FY) 2011 to 2,512 in FY 2014.

Enforcement Activities

The EPA developed an enforcement targeting method that allows EPA regions and states to prioritize their resources on water systems with health-based violations that show a history of unresolved violations across multiple rules. Under this targeting system, EPA headquarters and regions, along with states, work from the same list of drinking water systems that the EPA considers serious violators warranting immediate attention. When a drinking water system becomes a serious violator of SDWA standards, the EPA's drinking water ERP directs that, within 6 months, if the system has not returned to compliance, the EPA or state is to take formal enforcement action. Regardless of whether a public water system appears on the enforcement targeting list, under the ERP primacy, states should act immediately to address any acute, health-based violations, and then must confirm that systems with such violations returned to compliance. A quick response to SDWA violations decreases the risks to public health from drinking water that does not meet federal standards.

Under the ERP, formal enforcement action may include administrative orders with or without financial penalties, and civil or criminal referrals to the U.S. Department of Justice. If the system does not return to compliance under the initial enforcement order, the ERP emphasizes that the state or EPA should escalate its enforcement response. Escalation to a more serious enforcement action can include issuing an administrative order with financial penalties, initiating receivership proceedings to find a new owner for a system, or referring cases to the Department of Justice for civil or criminal action.

Compliance Assistance Activities

Using compliance assistance, the EPA can help states address the technical, managerial or financial needs at small systems that may serve as barriers to compliance. To help systems improve their technical, managerial and financial capacity, the EPA, states and other government and non-profit partners offer assistance designed to help fill capacity gaps. These compliance assistance activities can include providing technical assistance with treatment processes, training and certifying operators, and providing guidance on management and maintenance issues. Additionally, in 2015, the EPA initiated a national workgroup

to develop best management practices for drinking water systems with long-standing noncompliance.

The EPA primarily provides compliance assistance through two national grantees: the National Rural Water Association and the Rural Community Assistance Partnership. In FY 2014, the grantees each received \$4 million in EPA funds to provide training and technical assistance to small public water systems throughout the United States and its territories. The goal for the grantees' work is to improve compliance at the systems they serve.

To help meet the financial needs of small systems, compliance assistance efforts may also include financial training and referrals to potential funding sources. The EPA typically disseminates funds through the states, which supplement grants from the EPA with their own funds and other federal sources. Two major EPA funding programs—the Public Water System Supervision grant program and the Drinking Water State Revolving Fund—provide funding to states.⁴ SDWA directs state recipients to set aside some of these funds for use in small disadvantaged communities. Other federal agencies, such as the U.S. Department of Agriculture and the U.S. Department of Housing and Urban Development, also provide funds to help small drinking water systems. Despite the existence of these funding sources, managerial and financial capacity shortcomings may prevent some small systems from actually receiving grants or loans. To help overcome this barrier, some compliance assistance providers also offer support to managers of small systems to ease the application and funds management burdens.

Responsible EPA Offices

The EPA's Office of Enforcement and Compliance Assurance (OECA), Office of Water, and regional offices share responsibility for addressing noncompliance at all public water systems, including small community water systems. Within OECA, the Office of Compliance; the Office Criminal Enforcement, Forensics and Training; and the Office of Civil Enforcement hold responsibility for SDWA enforcement. Within the Office of Water, the Office of Ground Water and Drinking Water holds primary responsibility for managing drinking water compliance assistance grants and other compliance assistance efforts. Additionally, the Office of Research and Development conducts pilot studies and, together with the Office of Water, provides monthly webinars to discuss treatment technology topics for small community water systems.

⁴ In FY 2013, the EPA obligated over \$99.6 million to fund the Public Water System Supervision grant program and \$861 million to fund the Drinking Water State Revolving Fund nationwide.

Scope and Methodology

We performed our work from November 2014 to January 2016. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our objective.

To answer our objective, we reviewed small community water systems the EPA identified as serious violators, to determine whether the enforcement or compliance assistance actions the EPA or states took resulted in the systems returning to compliance. According to the EPA, there were 2,252 small community water systems identified as serious violators as of October 2011. Of these systems, 193 had Tier 1 violations where there was the potential immediate impact on human health, and the systems were required to notify their customers about the potential risks to their health within 24 hours. We determined that three states/territories (Texas, Puerto Rico and Kansas) accounted for almost 45 percent of the United States' Tier 1 small system serious violators. We selected 30 small community water systems, 10 in each state/territory, for our sample.

Details on our scope and methodology, including prior oversight reports on this subject, are in Appendix A.

Tier 1 Violations

The Public Notice Rule was intended to give drinking water consumers accurate and timely information on violations, taking into account the seriousness of any potential adverse health effects that may be involved. Public notice requirements are divided into three tiers. Tier 1 violations—the most serious—require notification to users within 24 hours after a system learns of the violation. The EPA considers Tier 1 violations to include: failure to maintain microbial treatment, exceedances of health-based standards for fecal coliform, failure to test for fecal contamination after a total coliform test is positive, exceedance of health-based standards for nitrate, or failure to take a nitrate confirmation sample.

Results

The EPA's efforts to help states bring small systems into compliance through enforcement and compliance assistance resulted in some improvement. Nationally, in October 2011, the EPA classified 2,252 small community water systems as serious violators, including 193 systems with Tier 1 violations. For these 193 systems, within 3 years, 43 of those systems (or 22 percent) had returned to compliance. However, for the 84 small community systems across Puerto Rico, Texas and Kansas considered serious violators in October 2011, only 14 percent had returned to compliance; 72 systems (86 percent) remained noncompliant as of April 2015.

Our sample of small community water systems in Texas, Puerto Rico and Kansas focused on 30 of the 193 serious violators with Tier 1 violations identified in 2011. Each system faced specific challenges that made compliance difficult. In many cases, the EPA and states applied enforcement and compliance tools at their disposal to help systems. As a result, four systems had returned to compliance and several others made progress. However, at systems where serious noncompliance persists, the EPA needs to take additional steps to target/identify systems and coordinate with interested state and federal partners to overcome barriers.

Region 6 and Texas Efforts Resulted in Some Progress Toward Compliance

Among systems in our sample, efforts made by the EPA and Texas enabled some serious violators to make progress toward compliance. The EPA designated 43 of Texas's 3,780 small community water systems as serious violators with Tier 1 violations in October 2011. Of the 43 systems, 37 had not returned to compliance as of April 2015 (Appendix A, Table 2). Texas had the largest number of both small community water systems and small community water systems designated as serious violators with Tier 1 violations of any U.S. state or territory in October 2011. Drought, remote locations and financial challenges exacerbated the compliance challenges faced by small community water systems in Texas. In addition to Tier 1 violations for nitrate, the 10 Texas systems in our sample also violated a number of drinking water standards, including arsenic, radionuclides, disinfection byproducts and fluoride. Addressing violations for these contaminants can require connecting to new, uncontaminated water sources, installing new treatment technology such as reverse osmosis filtration systems, or a combination of solutions.

Promising Practice

The Texas Commission on Environmental Quality (TCEQ) stays informed about violations that pose a risk to human health because state-contracted samplers collect all chemical drinking water samples across the state. TCEQ receives sampling results regardless of whether the system has paid lab analysis bills. TCEQ funds this program, in part, through an EPA Public Water System Supervision grant.

To address the high number of violators and help systems to overcome the compliance barriers they face, EPA Region 6 and the Texas primacy agency—Texas Commission on Environmental Quality (TCEQ)—use a practice that integrates formal enforcement and compliance assistance. Among systems in our sample, we found that this practice has enabled serious violators to make progress toward compliance.

EPA Region 6 and TCEQ use formal enforcement actions to establish an engagement system that includes compliance assistance. When EPA Region 6 or TCEQ issue formal enforcement orders to small community water systems, the systems are responsible for establishing compliance schedules outlining the sequential tasks and milestones for returning to compliance, which are then approved by the EPA or TCEQ. Region 6 personnel remain engaged with the systems to track their progress toward meeting compliance schedule milestones. This includes regular communication with system owners and operators to discuss progress, obstacles and possible extensions.

Promising Practice

The Texas Water Infrastructure Coordination Committee arranges compliance assistance activities by convening state and federal funding agencies, technical assistance providers, water and waste water trade organizations, and regulatory agencies, including the following:

- Community Resource Group
- EPA
- TCEQ
- Texas Department of Agriculture
- Texas Rural Water Association
- Texas Water Development Board
- U.S. Department of Agriculture – Rural Development

In addition, both EPA and state formal enforcement orders inform the water systems about technical assistance and funding resources available through the Texas Water Infrastructure Coordination Committee. The committee includes representatives from the EPA and its Texas enforcement, funding and compliance assistance partners. The committee coordinates compliance assistance resources with the goal of protecting public health.

Case Study: Lockett, Texas

System: The Lockett drinking water system is managed by the Red River Authority of Texas and serves about 663 customers.

Violation: The EPA designated Lockett a serious violator beginning in December 2008 for nitrate violations.

Enforcement: EPA Region 6 issued a formal enforcement order to Lockett in September 2013.

Result: This system returned to compliance in 2014. The nitrate-contaminated groundwater well previously used at Lockett ran dry. Under the EPA enforcement order, the system began purchasing all of its drinking water from the neighboring city of Vernon. As a result, Lockett returned to compliance.

Either EPA Region 6 or TCEQ took formal enforcement action at all 10 sample systems in Texas. However, only two of the formal enforcement actions met the 6-month timeframe designated in the ERP. When the EPA established the ERP in 2009, the TCEQ mechanism for taking formal enforcement actions did not meet the EPA's ERP requirement. As a result, TCEQ referred many of its priority drinking water cases to EPA Region 6. Of those referrals, EPA Region 6 took 213 formal enforcement actions against small community water systems in Texas between 2012 and 2014. This included actions at nine of the 10 systems in our sample. In 2013, Texas adopted an EPA-accepted formal enforcement instrument and the state began issuing formal enforcement actions that comply with the ERP.

Case Study: Weinert, Texas

System: The Weinert drinking water system serves about 182 customers.

Violation: The EPA designated Weinert as a serious violator beginning in December 2008 for nitrate violations.

Enforcement: EPA Region 6 issued a formal enforcement order to Weinert on September 2012.

Compliance Assistance: The Texas Water Infrastructure Coordination Committee and the Texas Water Development Board both offered Weinert assistance. Weinert obtained a \$350,000 infrastructure loan from a state bank. Weinert officials said compliance assistance also helped them in understanding complicated contract requirements such as the "Buy American" requirement specified in their loan.

Result: This system remained in noncompliance as of March 2015, but was making progress toward compliance. Weinert opted to purchase water to blend with its existing source. However, Weinert subsequently learned that the purchased water system may not have sufficient water supplies to provide any water due to drought conditions. As a result, Weinert officials also plan to install a filtration system to reduce nitrate levels. Because the project would not be finished within the compliance schedule timeframe, Weinert officials requested, and the EPA granted, a compliance schedule extension until June 30, 2016. According to the EPA, construction was to begin in January 2016.



City of Weinert Water System:
Wellhead (EPA OIG photo)

Despite this progress toward compliance, Weinert officials expressed concern about the system's sustainability. Weinert relies on agriculture producers to purchase water for revenue, and officials expressed concern that as water rates rise, in part to fund the compliance fixes described above, farmers will drill their own wells, reducing their use of Weinert public water and reducing the revenue Weinert needs for loan repayment.

After a formal enforcement order is issued, the EPA and TCEQ use professional discretion to determine when to escalate enforcement actions because the ERP does not specify when or how to escalate enforcement. The EPA and state chose to escalate enforcement in two systems among our 10 in Texas. In one of the escalated cases, EPA Region 6 follow-up activity found that a system was not progressing toward compliance, so the region issued an Administrative Penalty Order to assess a financial penalty for continued noncompliance. TCEQ referred this case to the Texas Attorney General for further action, which may include increasing the financial penalty, placing a temporary injunction on the system, or establishing a court-mandated compliance schedule. In the second case, a system did not have a responsible owner so Texas worked to appoint a responsible owner by placing the system into receivership. Despite the appointment of a receiver, the system remains in noncompliance.

Case Study: South Midland, Texas

System: The South Midland water system serves about 165 customers. The investor-owned system was abandoned, so TCEQ appointed a receiver in March 2005 to operate the system until a new owner could be established.

Violation: The EPA designated this system a serious violator for nitrate violations beginning in December 2008.

Enforcement: EPA Region 6 issued a formal enforcement order in June 2012.

Compliance assistance: TCEQ encouraged South Midland to consolidate with a larger system, but the state said South Midland resisted this suggestion due to the cost associated with extending drinking water infrastructure to their geographically isolated location. In addition, TCEQ said that because this system is privately owned, public financing is generally not available.

Result: The system remained in noncompliance as of March 2015.

Conclusion for Region 6

Analysis of our 10 sample systems in Texas demonstrated that EPA Region 6 and TCEQ use both enforcement and compliance assistance in a coordinated manner. This approach includes issuing a formal enforcement order offering state and federal compliance assistance resources and escalating enforcement when the system does not demonstrate progress toward compliance. Although not all 10 cases made progress toward compliance, most did. We believe this enables the region and Texas to apply the leverage formal enforcement offers while helping small systems address underlying barriers to compliance. As the TCEQ takes over issuing formal enforcement orders under the ERP, EPA Region 6 and TCEQ should ensure that their current promising practices remain in place.

Region 2 and Territory Efforts in Puerto Rico Have Not Led to Compliance

The EPA and the commonwealth of Puerto Rico's enforcement and compliance assistance efforts have not led to improved compliance for the systems in our sample. The EPA designated 24 of Puerto Rico's 316 small community water systems as serious violators with Tier 1 violations in October 2011. Of the 24 systems, 23 had not returned to compliance as of April 2015 (Appendix A, Table 2). Puerto Rico included the second highest percentage of small community water systems designated as serious violators with Tier 1 violations of any U.S. state or territory in October 2011. The high percentage of serious violations reflects broader problems at small systems in Puerto Rico. For example, in 2013, the territory's primacy agency—the Puerto Rico Department of Health (DOH)—reported to Region 2 that samples at 35 percent of small community systems violated total coliform standards.

Territory drinking water managers said some systems did not even collect the required drinking water samples that would show whether water is safe to drink. In addition, DOH reported that 21 percent of the systems lacked disinfection treatment designed to address total coliform contamination before unsafe water reaches households.

The 10 systems in our Puerto Rico sample exhibited systemic challenges that we did not identify among the sample systems in Kansas and Texas. For example, of the 10 systems:

- All 10 systems violated total coliform limits, which may be corrected using disinfection (chlorination).
- None of the systems had a certified operator, even though SDWA regulations require that all public water systems be operated by qualified personnel.
- Six systems did not collect all required monthly samples in FY 2014.
- None of the systems collected the required annual chemical samples for FY 2014.⁵
- None of the systems demonstrated evidence that the system issued required public notices to warn consumers about coliform-contaminated drinking water.

These systems also faced long-standing technical, managerial and financial challenges such as the lack of an owner and certified operator, high electric rates, and low revenue. Within our sample, we found that although Region 2 and DOH

⁵ Territory personnel told us that EPA Region 2's Caribbean Environmental Protection Division provided Puerto Rico with an exemption from issuing violations for lack of chemical sampling at these systems. However, the documentation Puerto Rico provided did not indicate an exemption, and Region 2 Caribbean Environmental Protection Division personnel said they did not grant an exemption.

engaged in enforcement and compliance assistance activities, their efforts were unable to change the underlying challenges that prevented many small systems from complying with SDWA provisions.

Although Region 2 and/or DOH took formal actions at seven of the 10 systems, including multiple formal enforcement actions at four of the 10, these actions did not address the underlying causes of noncompliance. However, in only one instance did the EPA or DOH take enforcement action within the 6-month timeframe indicated in the ERP.

Our review showed that systems could not meet the compliance schedules without first addressing long-term capacity issues. For example, a DOH enforcement order we reviewed instructed the system in violation to:

... comply with the total coliforms sampling, as required by the Drinking Water Regulations, within the next six months. [The system] will be in compliance when the Department receives the sampling results reports each month of compliance. If by the end of the six (6) months [the system] has not started the sampling, the system will be referred to the Legal Division of the Department or to the Environmental Protection Agency (EPA) for appropriate enforcement actions.

However, the system lacked the certified operator, revenue and equipment to comply with sampling requirements. Thus, the system did not have the capacity to comply with the enforcement order. During our review, we found this system did not collect samples for the 6 months following this administrative order and DOH did not refer the system to Region 2 for additional enforcement action.

Case Study: Bayamoncito, Puerto Rico

System: The Bayamoncito water system serves about 536 customers in 180 households.

Violations: The EPA designated this system as a serious violator for total coliform violations beginning in December 2008. This system does not have a certified operator. The system collected no compliance samples from November 2013 through September 2014.

Enforcement: Despite the risks that the lack of sampling and total coliform contamination present to consumers, DOH did not issue a formal enforcement action to Bayamoncito until January 2015, which was 5 years after the system first appeared on the enforcement targeting list.

Result: This system remained in violation for total coliform as of March 2015, and at the time of our visit was under a boil water order. However, Bayamoncito did not certify that it notified the public about the risks it faced from drinking the contaminated water and how to mitigate the risks, per the Public Notification Rule. During our visit to this system in January 2015, we observed a horse corralled at one of the two wellhead sites with no exclusionary fencing. The horse manure in the area presented a direct risk to the well from coliform pollution.



Bayamoncito Water System: Horse, with drinking water well in background (EPA OIG photo)

This system may not have adequate funds for operation and maintenance. According to the most recent sanitary surveys, the system charges each household a monthly fee of \$15. If each household pays the fee, the system would receive \$2,700 in revenue each month. However, the cost of electricity is \$2,600 per month. The system operator indicated that the system relies on an agricultural subsidy to pay the electricity bills.

At four of our sample systems in Puerto Rico, DOH and EPA Region 2 continued to issue administrative enforcement orders at systems that did not comply. For example, at one system, the EPA issued seven administrative orders between 1994 and 2015 requiring the system to comply with the disinfection and filtration requirements of SDWA, yet no escalation beyond the administrative orders occurred (Table 1). Region 2 officials did not refer these cases to the U.S. Department of Justice because, in the past, the Department of Justice would not act on small community water systems that lacked an owner. In addition, assessing financial penalties could add to the financial burdens and divert resources needed for basic compliance.

Table 1: Systems in our sample that received multiple administrative orders without enforcement escalation as noncompliance persisted (Puerto Rico)

System	Years EPA orders issued	Years territory orders issued
Anon Carmelita	1994, 2005, 2009, 2010, 2014	2015
Pellejas	-	2009, 2015
Portillo Miramar	2012	2013
Zamas	1994, 1997, 2004, 2006, 2008, 2010, 2013	2010

Source: OIG analysis of EPA and territory documents.

Public Notice Must Be Verified

Public notification of drinking water violations represents the last line of defense against contaminated drinking water. Lack of public notice about fecal contamination leaves the public at risk of contracting illnesses such as hepatitis or cholera, and from symptoms such as diarrhea, cramps, nausea, jaundice, headaches and fatigue.

DOH officials reported that they informed drinking water systems in Puerto Rico to issue boil water notices over 2,000 times in FY 2013. The SDWA required these notifications for all 10 systems in our sample. The notifications must inform the public of ongoing contamination and how to properly treat contaminated water in their homes. However, neither EPA Region 2 management nor DOH officials knew whether small systems in violation of SDWA in fact issued the required public notices. The DOH did not require systems to document that they notified the public, even though SDWA requires confirmation of public notice occurred under the Public Notification Rule. As such, none of the 10 sample systems certified to DOH that they notified the public, and the DOH could not provide any other evidence to demonstrate whether public notice occurred when monthly coliform samples exceeded the regulatory limits.

When a system does not verify that it provided public notice, this constitutes an additional violation of SDWA, and the DOH should report this in the EPA’s Safe Drinking Water Information System database. However, the DOH did not report these additional public notice violations. This underreporting demonstrates that the level of noncompliance at Puerto Rico small systems exceeds the level presented in the Safe Drinking Water Information System and used to target enforcement activities.

Case Study: Zamas, Puerto Rico

System: The Zamas water system serves about 1,400 customers.

Violation: The EPA designated Zamas as a serious violator for total coliform violations beginning in December 2008.

Enforcement: The EPA issued seven enforcement orders between 1994 and 2013, and DOH issued an enforcement order in 2010. The system did not meet the compliance order requirements for filtration and disinfection, and did not return to compliance. In an attempt to ensure the public knew about the public health risks from the coliform-contaminated water, in May 2014, the DOH and EPA collaborated to hand-deliver public notices to each citizen in the community.

Result: This system continues to violate total coliform standards as of March 2015, and is subject to a permanent public notice to boil drinking water. While time-intensive, house-to-house public notice delivery better ensures that customers know about the risks they face from contaminated drinking water and how to mitigate the risks. In addition, DOH personnel said this raised the public interest in the system's problems.

Multiple Compliance Assistance Efforts Taken to Address Long-Standing Compliance Needs

EPA Region 2, DOH and several other organizations worked to identify and correct noncompliance issues in Puerto Rico. However, despite these various efforts, nearly 200,000 people in Puerto Rico still lack safe drinking water. We identified 10 organizations (see below) currently working to improve small system compliance in Puerto Rico through technical assistance, community development or research. For example, the Rural Communities Assistance Partnership provides drinking water system operator training. However, an official for the partnership told us that, once trained, operators frequently left systems where they served as volunteers for paid operator positions at larger systems. This demonstrates how one underlying capacity need (financial stability) may undermine efforts to build capacity in another area (technical capacity).

Small System Drinking Water Assistance Providers in Puerto Rico

- American Water Works Association
- Environmental Financial Advisory Board
- EPA
- Puerto Rico Aqueduct and Sewer Authority
- Puerto Rico DOH
- Puerto Rico Department of State
- Puerto Rico Electric and Power
- Rural Communities Assistance Partnership
- University of Puerto Rico
- U.S. Department of Agriculture

Region 2 told us that in 1997, Region 2 and the DOH developed the Enforcement and Compliance Assistance Strategy for Non-Puerto Rico Aqueduct and Sewer Authority Community Water Supply Systems to address noncompliance at small systems. Since 1997, Region 2 said this strategy has reduced the number of such systems from 232 to 175, and the percentage of active systems with disinfectant treatment has increased from 16 percent to 77 percent.

Case Study: Portillo Miramar, Puerto Rico

System: The Portillo Miramar drinking water system serves about 383 customers. This system received \$75,000 under an environmental justice cooperative agreement in 2007 to provide equipment, operator training and community support.

Violation: The EPA designated Portillo Miramar as a serious violator for total coliform violations beginning in December 2008. This system does not have a certified operator. The system collected no compliance samples in FY 2014.



Portillo Miramar water system's surface water intake. (EPA OIG photo)

Enforcement: EPA Region 2 issued a formal enforcement order in 2012 and DOH issued an administrative order in 2013.

Compliance assistance: The 2007 EPA environmental justice grant did not result in sustained compliance. The Puerto Rico Aqueduct and Sewer Authority approached this system to explore connecting to one of its larger systems nearby.

Result: This system remained in noncompliance as of March 2015.

The Governor of Puerto Rico began a new small drinking water system initiative in August 2014. The Governor's initiative aims to work through the Puerto Rico Department of State to "implement a program of support to communal drinking water systems, promoting the sustainable development of communities through self-management and training." The work plan identifies two implementation phases:

- First, create an interagency committee to provide organizational resources for the actual efforts on the ground.
- Second, create and implement administrative and operational training.

The Puerto Rico Department of State selected 17 pilot drinking water systems to assist. As of yet, the outcome of the Governor's initiative remains unknown, particularly in light of the 2015 financial crisis in Puerto Rico. However, the initiative may provide the EPA and its compliance assistance partners in Puerto Rico with an opportunity to combine resources. By looking to the Texas Water Infrastructure Coordination Committee model to assist serious violators, these territory partners can work to coordinate enforcement and compliance assistance

resources to solve underlying compliance challenges and develop sustainably compliant operations at small systems with serious violations.

Conclusion for Region 2

Region 2 and DOH have attempted to address compliance and capacity problems at small drinking water systems in Puerto Rico for decades. However, for the 10 community water systems in our sample, neither formal enforcement nor compliance assistance has resulted in compliance because the tools did not directly address the systemic technical, managerial and financial capacity challenges that inhibit these systems from complying with SDWA. The EPA and DOH need to engage in a long-term, system-specific strategy to ensure that small systems in Puerto Rico achieve compliance with SDWA.

Recommendations for Region 2

We recommend that the Regional Administrator, Region 2:

1. Establish a Puerto Rico coordinating committee, to include all relevant territorial and federal partners, and to coordinate the multiple efforts underway to improve compliance at priority systems, particularly small community water systems.
2. Include in Region 2 formal enforcement orders information about how noncompliant systems can access compliance assistance resources available through the coordinating committee established in Recommendation 1, and request Puerto Rico DOH to include this information in its formal enforcement orders.
3. Address deficiencies in the public notification system by:
 - a. Directing the Puerto Rico DOH to track whether they receive confirmation of public notice from small systems when it is required, issue additional violations when confirmation is not completed, and report violations in the Safe Drinking Water Information System in accordance with SDWA.
 - b. Conducting annual reviews to assure Puerto Rico DOH complies with Recommendation 3a.

Region 2 Comments and OIG Evaluation

Region 2 provided responses to our draft report (see Appendix C). The region agreed with the three recommendations and proposed adequate corrective actions. Region 2 also provided technical comments on the draft report. Where appropriate, we incorporated changes based on the agency's technical comments.

Region 7 and Kansas Efforts Did Not Use Enforcement Leverage

Among systems in our sample, the compliance assistance-focused efforts made by the state of Kansas have not resulted in achieving compliance. The EPA designated 17 of Kansas' 796 small community water systems as serious violators with Tier 1 violations in October 2011. Of the 17 systems, 12 had not returned to compliance as of April 2015 (Appendix A, Table 2). This places the state third in the number of small community water systems designated as serious violators with Tier 1 violations in the United States in October 2011. In Kansas, technical and financial challenges hinder small community water systems from complying with some SDWA regulations. The 10 systems in our sample violated drinking water standards for nitrate, radionuclides and disinfection byproducts, among others. Addressing violations for these contaminants can require using additional uncontaminated water sources, applying treatment technology such as reverse osmosis filtration systems, or a combination of solutions.

Neither EPA Region 7 nor the Kansas primacy agency—the Kansas Department of Health and Environment (KDHE)—followed the ERP for the systems in our sample: no formal enforcement action occurred in seven of the 10 cases in our sample. According to the 2012 KDHE drinking water program review, the EPA noted that KDHE should take steps to strengthen the drinking water enforcement program and to enlist the EPA's support for enforcement activities where appropriate. Despite this knowledge, Region 7 said it did not take formal enforcement action at any of the systems in our sample because the region did not receive a referral for action from Kansas. Due to the lack of enforcement actions, in part, serious noncompliance and the associated human health risks have persisted at one system for more than 20 years.

We identified two sample systems without formal enforcement actions that returned to compliance as of April 2015, and four sample systems that received financing to complete projects designed to return them to compliance. In the three cases with formal enforcement orders, the orders included a compliance schedule listing sequential tasks and milestones for achieving compliance.

Case Study: Pretty Prairie, Kansas

System: The Pretty Prairie water system serves about 680 customers.

Violation: The EPA designated this system as a serious violator for nitrate violations beginning in December 2008. Pretty Prairie has exceeded the EPA's nitrate limit of 10 milligrams per liter (mg/L) for nearly 20 years. For the four quarters of 2014, nitrate levels ranged between 20 to 24 mg/L.

Enforcement: The EPA stated that it issued a formal enforcement order in 1995 and KDHE issued a formal order in 1996. The EPA issued a Notice of Violation in August 2015.

Compliance assistance: Pretty Prairie is shown as a new project on KDHE's 2014 Project Priority List for a \$1.5 million loan to install a water treatment plant for nitrate removal. However, the request was removed in 2015 because the loan application submittal deadlines were exceeded and the system made no effort to contact KDHE.

Results: Pretty Prairie remained in noncompliance as of March 2015. Because high nitrate levels pose health risks to infants, the town provides bottled water to pregnant women and children up to 6 months old. However, the water system has not resolved the contamination problem. The EPA and KDHE have met with the city of Pretty Prairie, but neither has issued a formal enforcement action in the past 19 years.

Case Study: Beverly, Kansas

System: The Beverly water system serves about 158 customers.

Violation: The EPA designated this system as a serious violator for nitrate and radionuclides violations beginning in June 2011.



New well house in Beverly. (EPA OIG photo)

Enforcement: KDHE issued a formal enforcement order on February 25, 2013.

Compliance assistance: KDHE awarded this system a \$5,000 planning grant for a preliminary engineering plan in 2012. Beverly used the grants funds to drill a new well.

Results: This system remained in noncompliance as of March 2015, but is making progress toward compliance. The new well became operational in May 2015.

Conclusion for Region 7

EPA Region 7 and KDHE have not used enforcement effectively to provide both the leverage and the steps necessary to address serious noncompliance at small community water systems. Although KDHE provides compliance assistance to serious violators, without the leverage provided by formal enforcement compliance schedules, many serious violators remain in noncompliance.

Recommendation for Region 7

We recommend that the Regional Administrator, Region 7:

4. Comply with the ERP by (a) ensuring KDHE takes actions to return systems to compliance or issues a formal enforcement order within 6 months of becoming an enforcement priority, or (b) initiating formal enforcement actions in the absence of timely and appropriate actions by KDHE.

Region 7 Comments and OIG Evaluation

Region 7 agreed with the recommendation and provided a corrective action date. Region 7 opted to provide a formal response after our final report is issued.

OECA Needs to Increase Oversight of EPA Region Efforts and Coordinate Work Across Agency Offices

Nationwide, the EPA's and states' formal enforcement and compliance assistance efforts have not resulted in a return to compliance for many small systems with serious violations. The ERP focuses enforcement resources on systems deemed serious noncompliers, and directs primacy agencies to bring them back into compliance or place them under a formal enforcement action within 6 months. However, without identifying root causes of noncompliance and coordinating existing financial and compliance assistance resources with enforcement, many systems may not be able to return to compliance.

The EPA designed its ERP to ensure that states and regions apply enforcement leverage quickly to address human health risks. Of the 193 systems identified as serious violators with Tier 1 violations in October 2011, 76 percent remained in noncompliance in April 2015. In our sample, 10 of the 30 systems reviewed never received a formal enforcement order after the ERP was established, only three of the 20 formal enforcement orders complied with the ERP timeframes, and few cases were escalated by EPA or the state when noncompliance persisted. If regions and state or territory primacy agencies do not adhere to the policy, noncompliance that presents a risk to human health may persist. OECA needs to ensure that regions adhere to the policy where feasible to protect consumers of these drinking water systems.

Promising Practice

OECA convened a national workgroup with representatives from all 10 EPA regions and the Office of Water to characterize the barriers that have kept some public water systems from returning to compliance. The workgroup is considering the following goals:

- Defining "intractable" systems and identifying their significant barriers to compliance.
- Highlighting gaps in the EPA's legal authority, policies or other impediments (such as tax liens or inability to use grant funds for sampling).
- Understanding what tools and options are available to eliminate or reduce the barriers to compliance.
- Exploring the options for a searchable database to provide possible return to compliance options (such as success stories/intractable system summaries).

In addition to implementing the ERP, in August 2015, OECA initiated a cross-office workgroup to define a subset of drinking water systems, which have been in long-term noncompliance despite multiple actions taken by the state and EPA, and determine best practices to return systems to compliance. This effort brings together multiple offices within the EPA and has the potential to identify practices that may help to resolve noncompliance for the serious violators most in need. However, the workgroup has not yet established the subset of systems to be evaluated. Furthermore, the workgroup needs to coordinate with federal partners (such as the U.S. Department of Agriculture and U.S. Department of Housing and Urban Development) with additional resources

for small drinking water systems and which may have identified tools, options and best practices.

Recommendations to OECA

We recommend that the Assistant Administrator for Enforcement and Compliance Assurance:

5. Require regions to provide annual justification for the lack of formal enforcement action when regional actions do not comply with the ERP requirement for formal enforcement action or return to compliance at a priority system.

6. Through the EPA's workgroup focusing on "intractable" water systems:
 - a. Work with the relevant EPA program and regional offices (such as the Office of Water and Office of Research and Development) to establish a coordinated Action Plan for achieving workgroup goals that draws on expertise and tools across the agency.
 - b. Invite other federal agencies (such as the U.S. Department of Agriculture and U.S. Department of Housing and Urban Development) to assist in identifying and exploring the inclusion of non-EPA tools, options and best management practices that could help small community water systems.

OECA Comments and OIG Evaluation

OECA provided responses to our draft report (see Appendix D). OECA agreed with the two recommendations and proposed adequate corrective actions. The agency also provided technical comments on the draft report. Where appropriate, we incorporated changes based on the agency's technical comments.

Status of Recommendations and Potential Monetary Benefits

RECOMMENDATIONS						POTENTIAL MONETARY BENEFITS (in \$000s)	
Rec. No.	Page No.	Subject	Status ¹	Action Official	Planned Completion Date	Claimed Amount	Agreed-To Amount
1	17	Establish a Puerto Rico coordinating committee, to include all relevant territorial and federal partners, and to coordinate the multiple efforts underway to improve compliance at priority systems, particularly small community water systems.	O	Regional Administrator, Region 2	9/30/16		
2	17	Include in Region 2 formal enforcement orders information about how noncompliant systems can access compliance assistance resources available through the coordinating committee established in Recommendation 1, and request Puerto Rico DOH to include this information in its formal enforcement orders.	O	Regional Administrator, Region 2	6/30/16		
3	17	Address deficiencies in the public notification by: a. Directing the Puerto Rico DOH to track whether they receive confirmation of public notice from small systems when it is required, issue additional violations when confirmation is not completed, and report violations in the Safe Drinking Water Information System in accordance with SDWA. b. Conducting annual reviews to assure Puerto Rico DOH complies with Recommendation 3a.	O	Regional Administrator, Region 2	6/30/16 9/30/16		
4	20	Comply with the ERP by (a) ensuring KDHE takes actions to return systems to compliance or issues a formal enforcement order within 6 months of becoming an enforcement priority, or (b) initiating formal enforcement actions in the absence of timely and appropriate actions by KDHE.	O	Regional Administrator, Region 7	3/31/16		
5	22	Require regions to provide annual justification for the lack of formal enforcement action when regional actions do not comply with the ERP requirement for formal enforcement action or return to compliance at a priority system.	O	Assistant Administrator for Enforcement and Compliance Assurance	12/30/16		
6	22	Through the EPA's workgroup focusing on "intractable" water systems: a. Work with the relevant EPA program and regional offices (such as the Office of Water and Office of Research and Development) to establish a coordinated Action Plan for achieving workgroup goals that draws expertise and tools across the agency. b. Invite other federal agencies (such as the U.S. Department of Agriculture and U.S. Department of Housing and Urban Development) to assist in identifying and exploring the inclusion of non-EPA tools, options and best management practices that could help small community water systems.	O	Assistant Administrator for Enforcement and Compliance Assurance	6/30/16 6/30/16		

¹ O = Recommendation is open with agreed-to corrective actions pending.
C = Recommendation is closed with all agreed-to actions completed.
U = Recommendation is unresolved with resolution efforts in progress.

Detailed Scope, Methodology and Prior Reports

To answer our objective, we evaluated 4 years of drinking water compliance data presented in the EPA's Safe Drinking Water Information System and the EPA's Enforcement Targeting Tool. We identified systems that the EPA previously prioritized for enforcement to determine whether the enforcement or compliance assistance actions the EPA or states took resulted in the systems returning to compliance.

We selected 10 systems to analyze from each of three states/territories with the greatest number of small community water systems with Tier 1 violations that were designated serious violators on the EPA's Enforcement Targeting list for October 2011. Table 2 shows the breakdown of small community water system serious violators with Tier 1 violations as of October 2011 and their compliance status of those systems as of April 2015. We selected the October 2011 list to allow time for the primacy agency and EPA to address data quality issues identified when the Enforcement Targeting Tool began in 2010. Texas, Puerto Rico and Kansas account for almost 45 percent of the United States' small community water system serious violators with Tier 1 violations.⁶

⁶ While the U.S. Government Accountability Office (GAO) Report 11-381 (June 2011) found that the data states reported to the EPA did not reliably reflect the number of health-based and monitoring violations that community water systems have committed or the status of enforcement actions, we used this information to determine the states with the highest number of serious violators.

Table 2: Small community water system (CWS) violators with Tier 1 violations by state

State or territory	Number of small CWS serious violators with Tier 1 violations as of October 2011	Total number of small CWSs in state or territory in FY 2011	Percent of small CWS considered serious violators with Tier 1 violations as of October 2011	Estimated population served by small CWS serious violators with Tier 1 violations as of October 2011	Number of CWS serious violators with Tier 1 violations that returned to compliance as of April 2015	Number of CWS serious violators with Tier 1 violations that had not returned to compliance as of April 2015	Percentage of CWSs noncompliant as of April 2015
Texas	43	3,780	1.1%	15,113	5	37	86.0%
Puerto Rico	24	316	7.6%	17,242	1	23	95.8%
Kansas	17	796	2.1%	12,945	5	12	70.6%
Arizona	12	644	1.9%	4,924	3	9	75.0%
Washington	12	2,031	0.6%	1,340	4	8	66.7%
Idaho	9	694	1.3%	3,004	1	8	88.9%
Missouri	9	1,273	0.7%	5,539	5	4	44.4%
California	8	2,365	0.3%	865	1	7	87.5%
Alaska	7	412	1.7%	2,189	0	5	71.4%
American Samoa	5	18	27.8%	1,158	0	5	100.0%
U.S. Virgin Islands	5	77	6.5%	536	1	4	80.0%
Oregon	4	765	0.5%	142	1	3	75.0
Nebraska	4	549	0.7%	795	2	2	50.0%
New Jersey	4	367	1.1%	684	2	2	50.0%
Remaining 16 states/territories with serious violators	30	14,201	0.2%	9,804	12	17	56.7%
Remaining 21 states/territories without serious violators	0	13,787					
TOTAL	193	42,075	0.5%	76,280	43	146	75.6%

* Four systems are no longer operating as a community water system.
Source: OIG analysis.

Selection Criteria

To determine the factors that contributed to noncompliance and returning to compliance, we selected a judgmental sample of 10 small community water systems in each state or territory reviewed, resulting in 30 systems reviewed. We selected our sample from the list of 193 small community water systems with at least one Tier 1 violation that the EPA designated as serious violators in October 2011. We selected two types of systems in each state/territory:

- (1) Small community water systems that were considered serious violators for the entire period from October 2011 through October 2014.
- (2) Small community water systems that had enforcement actions taken or returned to compliance prior to October 2014.

Additionally, we selected systems with varying conditions that may influence the ability to comply, such as source water type (ground, surface or purchased water) and different geographical areas.

Sample Evaluation Methodology

We evaluated each of the 30 systems selected to determine its compliance history, enforcement actions taken against it, compliance assistance received and current compliance status. We analyzed the systems to determine characteristics of the systems that returned to compliance, such as enforcement history and compliance assistance and funding obtained, and compared to those systems that are not making progress.

We conducted site visits at eight systems in our sample to interview operators and residents, and to view the water systems and communities to better understand the challenges they face or are facing in returning to compliance. Additionally, we spoke with major providers of compliance assistance: the National Rural Water Association; the Rural Community Assistance Partnership; and the state/territory counterparts in Texas, Puerto Rico and Kansas.

We spoke with staff and officials in EPA Regions 2, 3, 6 and 7, as well as the applicable state/territory agency staff and officials administering the public drinking water enforcement program. Additionally, we interviewed staff and officials in the EPA headquarters' OECA and Office of Water. We also interviewed the Environmental Working Group and the Association of State Drinking Water Administrators on the compliance challenges facing small community water systems.

Prior Reports

GAO Report No. [GAO-11-381](#), *Drinking Water: Unreliable State Data Limit EPA's Ability to Target Enforcement Priorities and Communicate Water Systems' Performance*, June 17, 2011: GAO reported that the data states reported to the EPA for measuring compliance with health and monitoring requirements and for state enforcement actions under SDWA underreported both violations and enforcement activity at states. GAO estimated that states inaccurately reported 26 percent of the health-based violations that should have been reported and 84 percent of the monitoring violations that should have been reported. GAO recommended that the EPA resume data verification audits, establish data reporting goals with states, consider clarifying existing measures, and work with EPA regions and states to assess progress toward implementing related EPA Office of Water-identified corrections. The EPA partially agreed with two of the recommendations, disagreed with one, and neither agreed nor disagreed with one. GAO believes that the EPA needs to implement all of the recommendations to improve its ability to oversee SDWA. The EPA had not completed recommended corrective actions as of March 2016.

EPA OIG Report No. [12-P-0102](#), *Enhanced Coordination Needed to Ensure Drinking Water State Revolving Funds Are Used to Help Communities Not Meeting Standards*, December 1, 2011: The EPA OIG reported that the Drinking Water State Revolving Fund program was not taking full advantage of the data and tools available to identify noncompliant systems that may benefit from the program's funding. We recommended that the EPA establish checklists to help coordinate Drinking Water State Revolving Fund distribution with enforcement, and that the

EPA enhance coordination between regional and state programs. The EPA reported that it completed the corrective actions on October 10, 2012.

GAO Report No. [GAO-13-111](#), *Rural Water Infrastructure: Additional Coordination Can Help Avoid Potentially Duplicative Application Requirements*, October 16, 2012: GAO found that funding for rural water infrastructure is fragmented across three federal programs. The EPA's Drinking Water and Clean Water State Revolving Fund programs, along with the U.S. Department of Agriculture's Rural Utilities Service Water and Waste Disposal program, have, in part, an overlapping purpose to fund projects in rural communities with populations of 10,000 or less. Without uniform requirements, communities face a continuing burden and cost of applying for federal and state funds to improve rural water infrastructure. GAO found that the EPA and U.S. Department of Agriculture have taken some actions to coordinate their programs and funding, such as encouraging state-level programs and communities to coordinate in four key areas: program planning, policy and regulatory barriers, project funding, and environmental analyses and other common federal requirements. GAO made two recommendations to help the EPA and U.S. Department of Agriculture improve coordination. As of August 2015, one recommendation remained open. While the EPA and U.S. Department of Agriculture have drafted a memorandum that an EPA official said identifies actions that communities can take to streamline environmental analyses, this memorandum has not been finalized.

EPA OIG Report No. [15-P-0032](#), *EPA Needs to Demonstrate Public Health Benefits of Drinking Water State Revolving Fund Projects*, December 5, 2014: The EPA OIG reported that the EPA does not always use annual reviews of state Drinking Water State Revolving Fund programs to assess project outcomes. Without this information, the EPA cannot determine whether completed projects contributed to improved drinking water quality and public health. We recommended that the EPA enforce grant requirements that states input all necessary data in the project-level tracking database and review data completeness as part of the EPA's annual review of state performance, and that the EPA enhance coordination between the Drinking Water State Revolving Fund and Public Water System Supervision programs and periodically evaluate program results. The four recommendations are resolved with corrective actions pending.

GAO Report No. [GAO-16-237](#), *Water Infrastructure: EPA and USDA Are Helping Small Water Utilities with Asset Management; Opportunities Exist to Better Track Results*, January 27, 2016: The EPA and U.S. Department of Agriculture have provided millions of dollars to help small water utilities increase their technical, managerial and financial capacity, to better meet the challenge of repairing and replacing aging water infrastructure and provide safe and clean water to communities. Both agencies have identified asset management, such as identifying key assets (e.g., pipelines, treatment plants and other facilities), and assessing their life-cycle costs as a tool that water utilities can use to increase their ability to address infrastructure needs. However neither agency collects information on water utilities' use of asset management. GAO recommended that the EPA continue to include questions on water utilities' use of asset management in the clean water needs assessment and consider including questions about water utilities' use of asset management in future drinking water infrastructure needs assessment surveys. GAO also recommended that the EPA consider compiling into one document the existing cases and examples of the benefits and costs of asset management and widely share this information with water utilities. The EPA has not completed either of these recommendations.

Sample Description

Table 3: Details on 30 small community water systems included in the OIG sample

System	Source type	Maximum contaminant levels exceedances (between October 2011 and October 2014)	Population served	Compliance disposition (as of October 2014)	Formal state actions taken between October 2011 and March 2015	Formal EPA actions taken between October 2011 and March 2015
Texas						
SOUTH MIDLAND COUNTY WATER SYSTEMS	Ground water	nitrates	165	Noncompliant	1	1
CITY OF BENJAMIN	Purchased surface water	nitrates	264	Returned to compliance	0	1*
CITY OF WEINERT	Purchased ground water	nitrates	182	Noncompliant	0	1
NORTHSIDE WSC	Purchased ground water	nitrates	198	Noncompliant	0	1
WHEELER MUNICIPAL WATER SYSTEM	Ground water	nitrates	1,651	Noncompliant	1	0
FORT JACKSON MOBILE ESTATES	Ground water	radionuclides and fluoride	61	Noncompliant	0	2
GREENWOOD VENTURES**	Ground water	nitrates	25	Noncompliant	1	3
GRASSLAND WSC	Ground water	nitrates, arsenic and fluoride	65	Noncompliant	1	2
RRA LOCKETT WATER SYSTEM	Purchased ground water	nitrates	663	Returned to compliance	0	1
RRA TRUSCOTT GILLILAND WATER SYSTEM	Ground water	nitrates	128	Noncompliant	0	1
Puerto Rico						
COM. AISLADA EN DESARROLLO	Ground water	total coliform	440	Noncompliant	1	0
PORTILLO - MIRAMAR	Surface water	total coliform	383	Noncompliant	1	1
EL CERRO	Ground water	total coliform	149	Noncompliant	0	0
PELLEJAS	Ground water	total coliform	260	Noncompliant	1	0
ANON CARMELITA	Surface water	total coliform	800	Noncompliant	1	1
ACUED. CAÑABON SECTOR EL PARQUE	Surface water	total coliform	113	Noncompliant	0	1
BAYAMONCITO	Ground water	total coliform	536	Noncompliant	1	0
MULAS SECTOR SOFIA	Ground water	total coliform	53	Noncompliant	0	0
SECTOR LOZADA Y POZO DULCE	Ground water	total coliform	720	Noncompliant	0	0
ZAMAS	Surface water	total coliform	1,400	Noncompliant	1	1

System	Source type	Maximum contaminant levels exceedances (between October 2011 and October 2014)	Population served	Compliance disposition (as of October 2014)	Formal state actions taken between October 2011 and March 2015	Formal EPA actions taken between October 2011 and March 2015
Kansas						
PALMER, CITY OF	Ground water	nitrates	108	Returned to compliance	0	0
LONGTON, CITY OF	Purchased surface water	disinfection byproducts	318	Noncompliant	0	0
EVEREST, CITY OF	Ground water	nitrates	282	Noncompliant	0	0
SEVERY, CITY OF	Surface water	disinfection byproducts	248	Noncompliant	1	0
BEVERLY, CITY OF	Ground water	nitrate and radionuclides	158	Noncompliant	1	0
HAVILAND, CITY OF	Ground water	nitrates	686	Noncompliant	2	0
LEOTI, CITY OF	Ground water	nitrates	1,503	Noncompliant	0	0
DONIPHAN CO RWD 1 ***	Purchased ground water	nitrates	75	Noncompliant	0	0
POWHATTAN, CITY OF ***	Purchased ground water	nitrates	78	Noncompliant	0	0
PRETTY PRAIRIE, CITY OF	Ground water	nitrates	688	Noncompliant	0	0

Source: OIG analysis.

*EPA issued a formal enforcement order August 2011, which was prior to our timeframe of October 2011.

**One system in our sample sought to remove itself from serious violator status by becoming a private water system. By reducing the number of customers below 25, the systems could avoid legal/compliance requirements as a public water system. The system succeeded in reducing the number of connections, but according to TCEQ, the system was still providing drinking water to a transient population. Though reclassified as a transient noncommunity water system, the system was still regulated under SDWA. The system continued to violate nitrate limits in the fourth quarter of 2014, and also violated disinfection byproduct limits and total coliform monitoring and reporting requirements.

***Two systems in our sample did not comply with SDWA in part because they purchase drinking water from a nearby noncompliant system. Both systems rely on the city of Hiawatha, Kansas, which has been in noncompliance since December 2009 for nitrate violations. KDHE issued a formal enforcement action to Hiawatha in September 2013.

EPA Region 2 Response to Draft Report

February 5, 2016

MEMORANDUM

SUBJECT: Response to Office of Inspector General Draft Report No. OPE-FY14-0047
“Small Drinking Water Systems: EPA Needs to Take Additional Steps to Ensure Serious Violators Achieve Compliance,” dated January 4, 2016.

FROM: Catherine McCabe for
Judith Enck /s/
Regional Administrator

TO: Carolyn Copper, Assistant Inspector General
Office of Program Evaluation

Thank you for the opportunity to respond to the issues and recommendations in the subject audit report. Following is a summary of Region 2’s overall position, along with our position on each of the report recommendations. Region 2 agrees with each recommendation, and we have provided high-level intended corrective actions and estimated completion dates. For your consideration, we have also included a Technical Comments section to supplement this response.

REGION 2’S OVERALL POSITION

Region 2 agrees with the OIG that small community drinking water systems with serious violations must come into compliance with the health-based standards and treatment requirements of the Safe Drinking Water Act (SDWA). However, it is important to consider that the non-PRASA problem is an issue that is unique nationwide; no other area has such a large concentration of water supplies without an identifiable owner, dramatically limiting the ability to achieve compliance through enforcement action.

Recognizing the complexity of the issue, in 1997 Region 2 and the Puerto Rico Department of Health (PRDOH) developed the “Enforcement and Compliance Assistance Strategy for Non-Puerto Rico Aqueduct and Sewer Authority (PRASA) Community Water Supply Systems (Non-PRASA Strategy) to address non-compliance at small systems. Please see the attached Fact Sheet describing the non-PRASA historical highlights. The strategy established goals, commitments and priorities to determine where limited resources should be allocated to bring small systems into compliance in a progressive, system-specific approach. Approximately 70,000 actions, including inspections/sanitary surveys, enforcement actions, financial, technical and educational assistance, and research projects, among others, have been conducted at small systems since the strategy was first initiated.

As a result of our efforts, all registered non-PRASA systems have benefited and drinking water quality has been significantly improved. Most notably, since 1997, the number of non-PRASA systems has been reduced from 232 to 175, and the percentage of active systems with disinfectant treatment has increased from 16% to 77%. The attached Fact Sheet provides a more detailed description of actions and accomplishments through the non-PRASA strategy.

Given the progress to date, Region 2 recommends that the OIG report include a “Noteworthy Achievements” section which discusses these efforts and achievements.

	<p>from small systems when it is required, issue additional violations when confirmation is not completed, and report violations in the Safe Drinking Water Information System (SDWIS) in accordance with SDWA.</p> <p>b. Conducting annual reviews to assure Puerto Rico DOH complies with recommendation 3a.</p>	<p>Region 2 will also otherwise assist PRDOH with its development of an effective public notification tracking system, as well as with the issuance of violations and data entry of violations into SDWIS.</p> <p>Region 2's PWSS Program End of Year Review will include the evaluation of PRDOH's public notification tracking system.</p>	<p>4th Quarter FY 2016</p>
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CONTACT INFORMATION

If you have any questions regarding this response, please let me know or have your staff contact Region 2's Audit Coordinator, John Svec, at (212) 637-3699.

Attachment

OECA Response to Draft Report

February 16, 2016

MEMORANDUM

SUBJECT: EPA Comments on Draft Report: “*Small Drinking Water Systems: EPA Needs to Take Additional Steps to Ensure Serious Violators Achieve Compliance.*” Project No. OPE-FY14-0047, January 4, 2016.

FROM: Cynthia Giles, Assistant Administrator

TO: Carolyn Copper, Assistant Inspector General
Office of the Inspector General
Office of Program Evaluation

Thank you for the opportunity to respond to the issues and recommendations in the Office of Inspector General’s (OIG) January 4, 2016, draft report, *Small Drinking Water Systems: EPA Needs to Take Additional Steps to Ensure Serious Violators Achieve Compliance*. Following is a summary of the Office of Enforcement and Compliance Assurance’s (OECA) response to each of the report recommendations. For those report recommendations relating to OECA HQ, we have provided intended corrective actions and estimated completion dates. Regions 2 and 7 are responding to the recommendations directed to them. For your consideration, we have also included a Technical Comments attachment to supplement this response.

OECA agrees that clean drinking water is vitally important. We appreciate the acknowledgment in the OIG’s report of the work EPA has done to improve drinking water compliance in the United States. We also agree that there is a daunting list of challenges before us in continuing to make progress, especially for small community systems that lack the basic infrastructure, resources and capacity to provide clean drinking water. We agree with the recommendations that the OIG has made and will add those to our on-going efforts to address this important problem.

OECA is implementing ongoing efforts to identify small community water systems in long-term noncompliance and focusing additional resources on those small systems facing particular challenges in returning to compliance. As the OIG report makes clear, the 2009 Drinking Water Enforcement Response Policy (ERP) is an important part of OECA’s effort to identify non-compliance issues that pose a serious risk to public health and to ensure that EPA and our co-regulators take actions to ensure violations at those systems are corrected in a timely fashion. Under the ERP, EPA, states, tribes and territories are expected to resolve violations at all systems identified as serious violators including small community water systems with acute health-based violations. A central part of the ERP is the Enforcement Targeting Tool (ETT), which identifies the serious violators among the violations reported by states to the Safe Drinking Water Information System (SDWIS). The number of public water systems designated as serious violators has decreased by 75 percent since we adopted this new approach in early 2010.

While these strategies have made a difference for people in thousands of communities across the country, we know that the enforcement approach in the ERP is not sufficient in some cases to achieve the necessary compliance. As the OIG observed in its review, some of the small and very small community systems lack the basic capacity to run a compliant drinking water system; they serve very small, often low income, communities, they may not have a trained operator, and may have neither compliance resources nor ready access to such resources. For these “intractable” systems, as the OIG notes in a number of the case examples, enforcement orders are not likely a sufficient means to result in sustained compliance.

In recognition of this difficult problem, EPA is focused on new solutions for solving the unique challenges that are posed by drinking water compliance in these intractable situations. Our measure of success is a return to compliance with standards that are designed to provide safe drinking water. Enforcement orders can be a useful way to bring attention to these difficult situations, and we agree that enforcement attention plays an important role. However, it is far from enough. Compliance assistance, which is often part of a solution for smaller entities, can also fall short when there is not really a capable entity to receive assistance or there is frequent change in the person operating the system. We recognize that new answers are needed, and it is for that reason that we formed a workgroup in 2015 focused on this important subject. That group includes all regions, and also the Office of Water (OW), the Office of Research and Development (ORD), and other parts of EPA that are looking at creative financing options for communities that have few options: OW’s Drinking Water State Revolving Fund, Water Infrastructure and Resiliency Finance Center, Capacity Development Program. While the appropriate solution is not the same for every small community system in long-term noncompliance, financial capability, access to capital, and capacity development are three of their most common challenges.

The ERP establishes OECA’s expectations for how priority systems will be addressed. EPA will continue to use the ERP to actively engage primacy agencies, urging them to follow the ERP to ensure a prompt return to compliance with the Safe Drinking Water Act (SDWA). Although EPA cannot require states to follow the ERP, we note that the ERP was adopted after close collaboration with states on what strategies made sense to ensure compliance with standards adopted to ensure safe drinking water. . The ERP encourages states to use all tools at their disposal to return systems to compliance; enforcement, compliance assistance, and financial support are just three of these tools. If a state, tribal or territorial primacy agency fails to return a system to compliance or take enforcement within six months as per the ERP, then EPA will continue to notify the primacy agency, assess the situation, and take appropriate action.

The three jurisdictions the OIG looked at in detail - Kansas, Texas, and Puerto Rico - highlight the real challenges that the intractable small community water systems face for achieving and maintaining compliance. While the three locations the OIG reviewed are not necessarily representative of the national situation, they do highlight some of the shared challenges in obtaining compliance. The subset of small community water systems have basic capacity challenges and often cannot achieve and sustain long-term compliance merely by responding to an enforcement action. While most small community water systems that are serious violators return to compliance in less than one year, the OIG correctly notes that there is a subset of such

small systems where the problems are more intractable. The OIG review found that enforcement can be a useful tool in pressing for return to compliance in some cases. We agree and intend to continue to use that approach wherever it can make a difference.

The OIG report also reinforces the need for Agency-wide solutions utilizing the skills and resources of other offices, such as the OW and the ORD, to identify additional options. We also agree with this suggestion and will expand our efforts to find a broad range of solutions. OECA currently participates in webinars hosted by the ORD and the OW to communicate the findings from current EPA small systems research, which has proven to be a good forum for expanding the agency's thinking on ways to address these challenging problems. The webinar series provides a forum for EPA to communicate directly with state personnel and other drinking water and wastewater small systems professionals about topics like treatment technologies and system regionalization. These webinars foster collaboration and dissemination of information between EPA and stakeholders that can help to find solutions to difficult problems. In addition, and as reflected in our Corrective Action Plan below, we are working to identify relevant expertise and capacity-building opportunities within the Federal government and stakeholder community, and plan to coordinate efforts nationally.

OECA agrees that the OIG's recommendations would be beneficial in helping to accelerate progress toward our goal of improving compliance for small community water systems. We agree that while enforcement is important, we also need to explore additional options, given that the problem often cannot be resolved through enforcement, or by enforcement alone. These efforts are an important step toward providing the residents of all small communities with drinking water that meets the drinking water standards. The timelines for fulfilling the recommendations are included in the table below.

AGENCY’S RESPONSE TO REPORT RECOMMENDATIONS

Agreements

No.	Recommendation	High-Level Intended Corrective Action(s)	Estimated Completion by Quarter and FY (Calendar date)	Agency Explanation/Response
5.	<i>Require regions to provide annual justification for the lack of formal enforcement action when regional actions do not comply with the Enforcement Response Policy requirements for formal enforcement action or return to compliance at a priority system.</i>	We agree and will develop a mechanism for regions to annually explain deviations from the ERP, with respect to priority small community drinking water systems.	1st Quarter of FY2017, December 30, 2016	OECA will continue to work closely with the Regions, states, tribes and territories to address SDWA noncompliance nationally, including at small public water systems.
6.	<i>Through the EPA’s workgroup focusing on “intractable” drinking water systems: a. Work with the relevant EPA program and regional offices (such as the Office of Water and the Office of Research and Development) to establish a coordinated Action Plan for achieving workgroup goals that draws on expertise and tools across the Agency. b. Invite other federal agencies (such as U.S. Department of Agriculture and U.S. Department of Housing and Urban Development) to assist in identifying and exploring to inclusion</i>	a. Develop an Action Plan for EPA efforts to identify intractable systems and practices to return them to compliance. b. Engage with other relevant federal agencies to seek assistance as we develop and implement the action plan.	a. 3 rd Quarter of FY16, June 30, 2016 b. 3 rd Quarter of FY16, June 30, 2016 and ongoing during Action Plan implementation	OECA will continue to work toward solutions with the workgroup and build those ideas into our enforcement work.

	<p><i>of non-EPA tools, options and best management practices that could help small drinking water systems.</i></p>			
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CONTACT INFORMATION

If you have any questions regarding this response, please contact Gwendolyn Spriggs, OECA Audit Liaison, at (202)564-2439.

Attachment (Technical Comments)

cc:

- Joel Beauvais, OW
- Thomas Burke, ORD
- Shari Wilson, OECA
- Betsy Smidinger, OC
- Susan Shinkman, OCE
- Lauren Kabler, OCE
- Mamie Miller, OC
- Judith Enck, Region 2
- Mark Hague, Region 7
- Gwendolyn Spriggs, OAP

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