



U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF INSPECTOR GENERAL

*Protecting America's Waters*

# EPA Is Taking Steps to Improve State Drinking Water Program Reviews and Public Water Systems Compliance Data

Report No. 17-P-0326

July 18, 2017



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## Abbreviations

EPA	U.S. Environmental Protection Agency
GAO	U.S. Government Accountability Office
OIG	Office of Inspector General
OW	Office of Water
PWS	Public Water System
SDWA	Safe Drinking Water Act
SDWIS	Safe Drinking Water Information System

**Cover photo:** Georgia State Laboratory preparation of drinking water sample bottles to be sent to public water systems. (EPA OIG photo)

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# At a Glance

## Why We Did This Review

We conducted this review to evaluate how the U.S. Environmental Protection Agency (EPA) ensures that Safe Drinking Water Act (SDWA) primacy states—those states and territories granted primary responsibility for enforcement and implementation of SDWA—monitor and report drinking water sampling results from public water systems (PWSs). We also sought to determine how the EPA can improve its oversight of state drinking water sampling programs.

SDWA and its regulations require PWSs to routinely monitor and report drinking water quality. If a system does not monitor the quality of its water, consumers and primacy agencies cannot know whether the water meets health-based standards.

### **This report addresses the following EPA goals or cross-agency strategies:**

- *Protecting America's waters.*
- *Launching a new era of state, tribal, local, and international partnerships.*

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## ***EPA Is Taking Steps to Improve State Drinking Water Program Reviews and Public Water Systems Compliance Data***

### **What We Found**

The EPA primarily uses two oversight tools to determine whether PWSs are monitoring and reporting drinking water quality in accordance with SDWA:

- Program reviews of state drinking water programs, which may specifically include the assessment of monitoring and reporting issues.
- Compliance data updated by primacy states in the federal version of the Safe Drinking Water Information System.

**The EPA is taking action to improve oversight tools used to determine whether public water systems are monitoring and reporting drinking water quality in accordance with the Safe Drinking Water Act.**

We identified limitations to both tools. The program reviews did not exhibit the level of comprehensiveness and region-to-region consistency shown in previous data verifications. Also, there is the risk that states did not provide reliable information to the EPA data system on monitoring and reporting violations.

The EPA is currently taking action to address these limitations. Therefore, we make no recommendations. The agency confirmed the factual accuracy of our report and stated that the EPA remains committed to providing tools to enhance the nation's drinking water program. This report is closed upon issuance.



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

THE INSPECTOR GENERAL

July 18, 2017

**MEMORANDUM**

**SUBJECT:** EPA Is Taking Steps to Improve State Drinking Water Program Reviews and Public Water Systems Compliance Data  
Report No. 17-P-0326

**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:** Michael H. Shapiro, Acting Assistant Administrator  
Office of Water

Lawrence Starfield, Acting Assistant Administrator  
Office of Enforcement and Compliance Assurance

This is our report on the subject evaluation conducted by the Office of Inspector General (OIG) of the U.S. Environmental Protection Agency (EPA). The project number for this evaluation was OPE-FY16-0032. This report contains findings that describe the issues the OIG has identified; however, based on the EPA's ongoing actions to address these issues, this report contains no recommendations for further action. This report represents the opinion of the OIG and does not necessarily represent the final EPA position.

Because this report contains no recommendations, you are not required to respond to this report. However, if you submit a response, it will be posted on the OIG's public website, along with our memorandum commenting on your response. Your 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 you do not want to be released to the public; if your response contains such data, you should identify the data for redaction or removal along with corresponding justification.

We will post this report to our website at [www.epa.gov/oig](http://www.epa.gov/oig).

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## Purpose

The purpose of this review was to evaluate how the U.S. Environmental Protection Agency (EPA) ensures that Safe Drinking Water Act (SDWA) primacy states monitor and report drinking water sampling results from public water systems (PWSs), as well as to determine how the EPA can improve its oversight of state drinking water sampling programs.

## Background

SDWA and its regulations require PWSs to routinely monitor drinking water quality and report the results to the state for evaluation.<sup>1</sup> If a system does not monitor the quality of its water, consumers cannot know whether the water arriving at their taps meets health-based standards. For example, a lapse in effective monitoring and reporting in Flint, Michigan, contributed to residents' prolonged exposure to lead-contaminated drinking water.

In 2016,<sup>2</sup> state drinking water agencies reported monitoring and reporting violations for about 19 percent of all PWSs (29,157 out of 151,137 systems). Of the 29,157 PWSs with monitoring and reporting violations, about 40 percent (11,721 PWSs) violated at least one monitoring and reporting requirement under the Total Coliform Rule in 2016. Total coliforms—a group of related bacteria—indicate the presence of other pathogens in drinking water, and monitoring for total coliforms provides important information about the adequacy of water treatment and integrity of the drinking water distribution system. A lapse in monitoring for total coliforms could inhibit identifying the risk of waterborne pathogens, such as bacteria and viruses, and their associated illnesses.

A 2016 *USA Today* investigative report found that some 4 million Americans receive water from small operators who skipped required drinking water tests or did not conduct the tests properly, violating a cornerstone of federal safe drinking water laws.<sup>3</sup>

States and territories largely serve as the drinking water program administrators, where the EPA has granted them primary enforcement authority under SDWA.<sup>4</sup> These states and territories are known as “primacy agencies.” The EPA retains

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<sup>1</sup> Per the National Primary Drinking Water Regulations, a PWS provides water for human consumption through pipes or other constructed conveyances to at least 15 service connections or regularly serves an average of at least 25 people daily for at least 60 days a year.

<sup>2</sup> The EPA's official timeframe for 2016 includes information submitted between July 1, 2015, and June 30, 2016.

<sup>3</sup> Ungar, Laura and Nichols, Mark, “[4 million Americans could be drinking toxic water and would never know.](#)” *USA Today*, 13 December 2016.

<sup>4</sup> Per SDWA, “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.

overall responsibility for the national implementation of SDWA and oversees state administration and enforcement.

States are required to enter monitoring and reporting violations into the Safe Drinking Water Information System (SDWIS) databases.<sup>5</sup> The violations in SDWIS represent the cases in which the EPA knows that PWSs did not collect samples or did not report on time. EPA staff can monitor these systems, review violations, and offer support to improve PWS performance. However, if states do not consistently identify monitoring and reporting lapses or do not issue monitoring and reporting violations, no lapses would be reported to the EPA via SDWIS. In these cases, states and the EPA cannot use their existing data systems to identify PWSs that require correction. This lack of information also masks risks to human health.

State involvement varies for assisting PWSs with their monitoring and reporting activities. Some state regulators maintain websites with sampling schedules, while some use automated reminder phone calls to alert PWS staff that it is time to collect a required monitoring sample. Other state regulators send drinking water sampling bottles along with instructions to PWS staff to assist them with collecting samples and returning them within the time permitted. In some states, state staff or contractors collect water samples from PWSs.

The EPA engages in regular oversight of primacy agencies, both during annual PWS supervision reviews and in-depth periodic program reviews. In these program reviews, the EPA selects and reviews state files and identifies discrepancies, including matters concerning compliance with regulatory requirements, such as sampling schedules and quantities. Prior to 2013, the EPA conducted program reviews in each state every 3 to 4 years using a contractor, who evaluated the implementation of National Primary Drinking Water Regulations. The EPA referred to these contractor-led reviews as data verifications. According to EPA staff, these data verification reviews ended when funding ceased, at which point EPA staff assumed the program review function.

## **Responsible Offices**

The EPA's Office of Water (OW), Office of Enforcement and Compliance Assurance, and regional offices are responsible for the oversight of primacy states' implementation of drinking water programs.

## **Scope and Methodology**

We conducted our review from September 2016 to May 2017. We conducted this performance audit in accordance with generally accepted government auditing

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<sup>5</sup> Primacy states are required to provide to SDWIS timely, accurate and complete data on inventory, violations and enforcement. The states may do this through the "SDWIS-State" software or through submission of files through the State-EPA Exchange Network to "SDWIS-Fed," which the EPA uses to track violations.

standards. Those standards require that we obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our objectives.

We reviewed SDWA, various rules under the National Primary Drinking Water Regulations, and EPA guidance on conducting program reviews. We sought information through an Office of Inspector General (OIG) questionnaire sent to all 10 EPA regions to determine their key oversight tools to monitor state drinking water programs. We reviewed six state data verifications (Arkansas, Georgia, Minnesota, North Dakota, Pennsylvania and Rhode Island) completed in 2012, as that was the last year that the EPA had funds available for the contractor. All six data verifications contained assessments of the states' implementation of the eight rules with monitoring and reporting requirements (Table 1).

<b>Table 1: National Primary Drinking Water Regulations included in the 2012 data verifications</b>
1. Total Coliform Rule
2. Phase II/V (including Nitrate) Rule
3. Lead and Copper Rule
4. Ground Water Rule
5. Stage 1 and Stage 2 Disinfectants and Disinfection Byproducts Rule
6. Radionuclides Rule
7. Surface Water Treatment Rules (including Interim and Long Term 1 Enhanced Surface Water Treatment)
8. Public Notice Rule

Source: OIG analysis.

We obtained 12 program reviews conducted by EPA staff between 2012 and 2016 from the EPA regions we interviewed (Regions 3, 4, 5 and 6), a program review we had access to from a prior evaluation (Kansas), and a program review from Region 9 for national comparison purposes. We evaluated program reviews from Alabama, California, Florida, Georgia, Kansas, Kentucky, Louisiana, Maryland, North Carolina, Ohio, South Carolina and Texas. To evaluate the comprehensiveness of the reviews, we compared whether the eight rules included in the data verifications were also assessed in the program reviews.

We interviewed EPA OW and Office of Enforcement and Compliance Assurance staff. Additionally, we interviewed drinking water staff in EPA Regions 3, 4, 5 and 6. We interviewed Georgia's drinking water program and state laboratory staff to understand their policies and procedures. We also interviewed various non-governmental organizations to gain their perspective on state drinking water programs and PWSs.



## Results of Evaluation

The EPA primarily uses two oversight tools to determine whether PWSs are monitoring and reporting drinking water quality in accordance with SDWA:

- Program reviews of the state drinking water programs. These reviews may specifically include the assessment of monitoring and reporting issues.
- Compliance data updated by primacy states in SDWIS-Fed.

We identified limitations to both tools. The program reviews did not exhibit the level of comprehensiveness and region-to-region consistency shown in previous data verifications. Also, there is the risk that states did not provide reliable information to the EPA data system on monitoring and reporting violations. Without reliable, consistent information about drinking water monitoring and reporting violations, the EPA may not have the information it needs to manage a nationally consistent drinking water oversight program. During our evaluation, the EPA identified steps underway to improve the limitations we observed for both oversight tools.

### ***EPA Is Working to Improve Program Reviews***

The EPA engages in regular oversight of primacy agencies, both during annual PWS supervision reviews and in-depth program reviews. Our review showed that the program reviews lacked the national comprehensiveness once provided by data verifications.

We found that program reviews vary by region. We reviewed 12 program reviews and found that most of the reviews did not cover all of the eight rules with monitoring and reporting requirements. We found that seven of the 12 program reviews included fewer than half of the rules (Alabama, California, Florida, Georgia, Kentucky, Maryland and North Carolina). For example, Region 3 evaluated only one drinking water rule—the Lead and Copper Rule—during its review of Maryland’s program. Two program reviews for Ohio and South Carolina addressed at least half—but not all—of the eight rules. Only Regions 6 and 7 evaluated all eight rules during their program reviews of Kansas, Louisiana and Texas.

To address the lack of consistency and comprehensiveness of program reviews, OW is taking a number of steps. According to EPA staff, since OW lost funding for data verifications, program reviews are conducted with limited regional resources and expertise. In 2013, OW established a national workgroup that developed and disseminated guidance for conducting program reviews to regional staff. In 2015, OW developed a document outlining “quickly accessible rule references” for regional staff to use during on-site reviews. OW updated this document in 2016. Since 2014, OW has held at least 13 training sessions or

lessons-learned meetings on program review protocol, and OW staff stated they plan to continue with a quarterly national training plan for regional personnel.

### ***EPA Is Working to Improve the Accuracy and Reliability of Data***

Primacy states are required to report drinking water data periodically. The data are maintained in SDWIS-Fed. OW's fiscal year 2016–2017 *National Water Program Guidance* describes how OW will work with states, territories and tribal governments to assure high quality and accessible water information:

Accurate, complete, and transparent system performance data is essential in understanding how the nation's PWSs are faring in meeting the expectation of delivering high quality safe drinking water to consumers.<sup>6</sup>

Based on conversations with EPA regional and headquarters staff, there is a risk that some primacy states are not entering monitoring and reporting violations data into SDWIS-Fed as required. A 2011 U.S. Government Accountability Office (GAO) report<sup>7</sup> supports this. The GAO report found that SDWIS data from states did not reliably reflect the frequency of monitoring violations at community water systems.<sup>8</sup> In its fiscal year 2016 Federal Managers' Financial Integrity Act Assurance Letter, OW assessed the risk associated with states not having enough resources to maintain reporting requirements and determined that it posed a low-level risk to information in SDWIS-Fed.

The EPA is taking steps to improve data quality. The EPA has begun updating SDWIS through its development of SDWIS Prime, which OW senior leaders say will allow electronic verification of data and incorporate data quality functions. The EPA anticipates launching SDWIS Prime in 2018.

In addition, OW released the Compliance Monitoring Data Portal in September 2016. OW managers said the portal will enable PWSs and laboratories to report drinking water data electronically to primacy agencies. The first state to use the portal was Utah, in March 2017, and EPA staff anticipate that five additional states will begin using the portal by the end of 2017. They anticipate this system will lead to fewer reporting errors, improved data quality, and reduced time needed to report state data to the EPA.

OW personnel said that primacy agencies' adoption of both the Compliance Monitoring Data Portal and SDWIS Prime will be voluntary. The EPA anticipates

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<sup>6</sup> EPA OW, *FY 2016–2017 National Water Program Guidance*, [EPA 420-R-15-008](#), April 2015.

<sup>7</sup> GAO, *Drinking Water: Unreliable State Data Limit EPA's Ability to Target Enforcement Priorities and Communicate Water Systems' Performance*, [GAO-11-381](#), June 2011.

<sup>8</sup> The GAO report defined monitoring violations to include a variety of situations, ranging from instances in which a water system did not do required monitoring, did not report the results to the state on time, or did not issue public notices of a health-based violation in a timely fashion.

that both new data systems will improve the accuracy and reliability of drinking water data reported to the EPA. Because OW and states have not fully implemented these two tools, the OIG could not review the adequacy of their oversight capabilities.

## **Conclusion**

Our review identified limitations to the EPA's oversight tools that impede the agency's ability to conduct consistent oversight of the national drinking water program and reduce the reliability of EPA monitoring and reporting data. However, the EPA is engaged in ongoing activities to address these limitations. Although we cannot yet determine the outcomes for these ongoing agency actions, based on the agency's engagement to correct the issues we identified, we make no recommendations.

## **Agency Response and OIG Evaluation**

On June 23, 2017, OW provided its response to our draft report. OW confirmed the factual accuracy of our report and stated that it remains committed to providing tools to enhance the nation's drinking water program. Appendix A contains OW's response to our draft report.

## ***Agency Response to Draft Report***

(Received June 23, 2017)

### **MEMORANDUM**

**SUBJECT:** Response to the Office of Inspector General Draft Project No. OPE-FY16-0032, “EPA is Taking Steps to Improve Consistency of State Drinking Water Program Reviews and Public Water System’ Compliance Data,” dated May 24, 2017

**FROM:** Michael H. Shapiro /s/  
Acting Assistant Administrator

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

Thank you for the opportunity to review the subject audit report. The Environmental Protection Agency has worked closely with the EPA’s Office of Inspector General to provide detailed information regarding the implementation of the drinking water program via a series of conference calls, and the Agency provided several technical comments and clarifications on previous draft versions of the report. The IG has taken into consideration our recommendations and these are reflected in the most recent draft version of the report the IG shared with the EPA.

### **AGENCY’S OVERALL POSITION**

The EPA works collaboratively with primacy agencies to provide oversight and assistance in the implementation of the National Primary Drinking Water Regulations. Primacy Agencies are facing resource and technical challenges associated with implementing regulations that address over 90 contaminants for approximately 153,000 public water systems nationwide. In addition, the water sector is facing increasing challenges associated with unregulated contaminants, aging infrastructure, and extreme weather events, as well as flat or diminishing resources. The EPA continues to provide important support for the implementation of primacy agency drinking water programs through both the Public Water System Supervision program, the Drinking Water State Revolving Fund set-asides and via our training, technical assistance and oversight efforts. The EPA is committed to continuing to provide tools that will modernize management of drinking water data, such as the recent release of the Compliance Monitoring Data Portal to support electronic reporting, and the updated Safe Drinking Water Information System (SDWIS Prime) in 2018. The EPA will also continue to enhance our oversight tools such as primacy program file reviews, to ensure we are able to identify the state’s training and technical assistance needs.

## AGENCY'S RESPONSE TO REPORT RECOMMENDATIONS

The EPA welcomes the IG's recommendations on potential improvements to this program in an effort to enhance the nation's drinking water program, and we confirm the factual accuracy of all aspects of the draft report.

**cc:** Peter Grevatt  
Anita M. Thompkins  
Maria A. Lopez Carbo

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