

**STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
REGULATORY SERVICES BRANCH
DRINKING WATER SECTION**

**PUBLIC WATER SYSTEMS ANNUAL COMPLIANCE REPORT
FOR CALENDAR YEAR 2013**



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THE DRINKING WATER PROGRAM: AN OVERVIEW

The Environmental Protection Agency (EPA) established the Public Water System Supervision (PWSS) Program under the authority of the 1974 Safe Drinking Water Act (SDWA). Under the SDWA and the 1986 Amendments, EPA sets national limits on contaminant levels in drinking water to ensure that the water is safe for human consumption. These limits are known as Maximum Contaminant Levels (MCLs) and the Maximum Residual Disinfectant Levels (MRDLs). For some regulations, EPA establishes treatment techniques in lieu of an MCL to control unacceptable levels of contaminants in water. The Agency also regulates how often public water systems (PWSs) monitor their water for contaminants and report the monitoring results to the states or EPA. Generally, the larger the population served by a water system, the more frequent the monitoring and reporting (MIR) requirements. In addition, EPA requires PWSs to monitor for unregulated contaminants to provide data for future regulatory development. Finally, EPA requires PWSs to notify their consumers when they have violated these regulations. The 1996 Amendments to the SDWA require consumer notification to include a clear and understandable explanation of the nature of the violation, its potential adverse health effects, steps that the PWS is undertaking to correct the violation and the possibility of alternative water supplies during the violation. The SDW A applies to the 50 states, the District of Columbia, Indian Lands, Puerto Rico, the Virgin Islands, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands.

The SDW A allows states, tribes and territories to seek EPA approval to administer their own PWSS Programs. The authority to run a PWSS Program is called primacy. For a state to receive primacy, EPA must determine that the state meets certain requirements laid out in the SDWA and the federal regulations, including the adoption of drinking water regulations that are at least as stringent as the federal regulations and a demonstration that they can enforce the program requirements. Of the 56 states and territories, all but Wyoming and the District of Columbia have primacy. The EPA regional offices administer the PWSS programs within these two jurisdictions.

The 1986 SDW A Amendments gave Indian tribes the right to apply for and receive primacy. EPA currently administers PWSS programs on all Indian lands except the Navajo Nation, which was granted primacy in late 2000.

CONNECTICUT'S ROLE

The Connecticut Department of Public Health (DPH) is the State's lead agency in all matters related to the purity and adequacy of drinking water. Connecticut's primacy status, granted by the EPA, allows DPH to implement and enforce provisions of the SDWA through State statutes and regulations. The Drinking Water Section (DWS) is part of DPH's Regulatory Services Branch and administers the statewide drinking water program associated with the SDWA.

Each quarter, the DWS submits data to EPA's Safe Drinking Water Information System (SDWIS/FED), a database maintained by EPA. The data submitted include, but are not limited to, PWS inventory information, the

incidence of Maximum Contaminant Level, Maximum Residual Disinfectant Level, monitoring, and treatment technique violations; and information on enforcement activity related to these violations.

Section 1414(c)(3) of the SDWA requires states to provide EPA with an annual report of violations of the primary drinking water standards. This report provides the numbers of violations in each of six categories: MCLs, MRDLs, treatment techniques, variances and exemptions, significant monitoring violations, and significant consumer notification violations. Data reported and retrieved from SDWIS/FED form the basis of this report. This document comprises the DWS's annual report which must be made available to the public and submitted to EPA. This report covers the calendar year 2013.

PUBLIC WATER SYSTEMS IN CONNECTICUT

The DWS has regulatory oversight of approximately 2,523 PWS throughout Connecticut. These PWS fall into three categories. Community PWS, of which there are currently 548, serve at least 25 year round residents. In Connecticut, approximately 76% of the state's population of over 3.5 million people obtains their drinking water from community water systems. Non-transient non-community PWS, of which there are currently 539, serve at least 25 of the same individuals, other than year round residents, for more than six months per year. Examples of non-transient non-community PWS are schools, day care centers, and factories. Finally, there are currently 1,439 transient non-community PWS in Connecticut which provide drinking water to transient populations that visit places like restaurants and campgrounds.

Over two-thirds of the population served by community PWS are supplied by surface water sources with groundwater sources supplying the remaining community PWS population. A majority of the non-community PWS rely on groundwater while four purchase their water from larger community systems supplied by surface water.

REGULATION OF CONTAMINANTS

Public water systems are required to routinely monitor and test their drinking water. Community PWS monitor and test for all regulated microbiological, chemical and radionuclide contaminants. Non-transient non-community PWS monitor and test for all regulated microbiological and chemical contaminants. Transient non-community PWS are required to monitor and test for microbiological contaminants and two chemical contaminants (nitrate and nitrite). EPA sets a national limit or standard known as the Maximum Contaminant Level ("MCL") for each regulated contaminant. The MCL represents the maximum permissible level of a contaminant in the water.

Public water systems are required to routinely submit the results of their water quality tests to the DWS. The water quality data is then entered into a data system called the Safe Drinking Water Information System (SDWIS/STATE) which helps DWS staff determine PWS compliance with all applicable MCLs and monitoring requirements.

EPA also establishes minimum treatment techniques for certain contaminants and indicators. This report includes violations of treatment technique standards under the Surface Water Rules, Disinfectants and Disinfection By-Products Rules, the Ground Water Rule and the Lead and Copper Rule. A violation of a treatment technique means a failure to meet operational standards for a specific rule.

CALENDAR YEAR 2013 REPORT OF PUBLIC WATER SYSTEM VIOLATIONS

This annual violation report includes four types of violations. The first type of violation is for MCL violations. The second type is for treatment technique violations. The third type is for significant monitoring violations which are defined by EPA as a PWS's failure to collect a required sample or submit a required water quality test result to the DWS. The fourth type is for failure to comply with the consumer confidence reporting and public notification requirements.

When a PWS has a violation, the DWS provides technical assistance to the PWS to ensure that it implements all required procedures associated with the violation. Actions, including additional monitoring, public notification, and any necessary corrective actions, such as the installation of appropriate treatment are considered on a case by case basis.

For calendar year 2013, the DPH issued 299 formal enforcement actions to PWS. The actions taken included: 17 Consent Orders and 163 formal Notices of Violation and 61 administrative penalties assessed. The majority of these formal enforcement actions were issued to PWS that incurred significant monitoring and reporting violations.

Connecticut does not have any PWS that have been granted a variance or exception; therefore there have not been any violations in calendar year 2013 that were related to variances or exceptions.

The goal of the DWS is to oversee the return of PWS to compliance as quickly as possible. The DWS remains committed to continuing its positive working relationship with the PWS for the express purpose of protecting public health by minimizing violations.

REPORT EXPLANATION

The majority of PWS with violations are small systems serving populations of less than 1,000 people. Small PWS are the most frequent violators of Federal and State drinking water requirements. This is commonly due to financial and managerial inadequacies. The DWS devotes considerable time and effort to helping small community and non-community PWS understand and comply with their mandated requirements.

The attached tables present data on PWS violations in calendar year 2013. Table A provides an overall summary of the four types of violations incurred in calendar year 2013. Table B lists all individual MCL violations; Table C lists treatment technique violations; Table D lists all significant monitoring and reporting violations; Table E lists public notification violations; and Table F concludes with consumer confidence reporting violations. The definitions appended to Table A further explain the terms in the report and tables.

MCL Violations: (Table B)

For calendar year 2013, the DWS issued a total of 240 violations to 155 PWS for MCL violations.

Microbiological: Approximately 87% of all MCL violations in calendar year 2013 were for microbiological contamination of public water supplies.

1. **Total Coliform:** One hundred and forty (140) PWS were issued a total of 199 total coliform MCL violations. Of the 140 PWS, 34 were small community water systems and 106 were non-community water systems. A PWS incurs a violation for total coliform when the test result shows the presence of coliform bacteria in the water. When a violation occurs, the DWS assists the PWS with assessing the sanitary integrity of the water system in an effort to identify the source of the coliform bacteria. Total coliforms are common in the environment and are generally not harmful themselves. The presence of these

bacteria in drinking water, however, generally indicates a sanitary problem with the system that should be corrected. The problem is often corrected through system improvements and chlorination of the system. All of these violations have been returned to compliance.

2. **Total Coliform Acute:** Eight (8) PWS were issued a total of 9 total coliform acute MCL violations. All of the PWS were non-community water systems. An acute total coliform violation occurs when fecal coliform or E. coli bacteria is detected in the system's water. E. coli bacteria are generally not harmful themselves, but their presence in drinking water is serious because they usually are associated with sewage or animal wastes. All of the PWS have returned to compliance.

For E. coli bacteria contamination, the DWS assists the PWS with completing a thorough or detailed inspection of the well and surrounding area. Public water systems must notify customers that E. coli bacteria have been found in the water within 24 hours of discovery, and DWS policy states that the system request that its customers boil their water until the source is free of contamination. This inspection can often reveal the source of the contamination. Appropriate corrective actions, chlorination of the well and additional sampling typically returns the system to compliance. Formal enforcement actions are needed in some situations to address these violations.

Chemicals: In calendar year 2013, nine (9) PWS in Connecticut incurred 17 violations for MCL exceedances of regulated chemicals (inorganic chemical, organic chemicals and pesticides, herbicides and PCBs). Of the 9 PWS, one (1) was a small community water system and eight (8) were non-community water systems. Eight (8) systems have returned to compliance. Long-term exposure to these chemicals can pose serious risk to public health. Additionally, infants can become ill if exposed to high levels of nitrate for a short period of time. Regulated contaminants can occur naturally in the ground or can also be the result of releases to the ground from commercial and industrial processes or improper disposal of hazardous waste.

Radionuclides: In calendar year 2013, four (4) community PWS in Connecticut incurred 9 violations for MCL exceedances of radionuclides. One (1) of the systems has returned to compliance. Most radionuclides are naturally occurring, although drinking water sources can also become contaminated by human-made nuclear materials. Most drinking water sources have very low levels of radioactive contaminants ("radionuclides"), which are not considered to be a public health concern.

Disinfection By-Products: In calendar year 2013, three (3) PWS in Connecticut incurred 6 violations for MCL exceedances of Total Trihalomethanes. All of the systems have returned to compliance. In many cases, water needs to be disinfected to inactivate (or kill) microbial pathogens such as Giardia. However, disinfectants like chlorine can react with naturally-occurring materials in the water to form byproducts such as Trihalomethanes, Haloacetic acids, Chlorite and Bromate. These byproducts, if consumed in excess of EPA's standard over many years, may lead to increased health risks.

When a PWS exceeds an MCL it must notify its customers of the violation within 30 days. A PWS must take corrective actions to return to compliance. Such corrective actions include, identification and removal of the suspected source of contamination, replacing the contaminated source of supply with a better protected source or by identifying and installing treatment specifically designed to reduce the level of the contaminant in the water. The DWS provides an engineering technical review and subsequent approval of all proposed treatment prior to installation.

Treatment Technique Violations: (Table C)

For some regulations, the EPA establishes treatment techniques (TTs) in lieu of an MCL to control unacceptable levels of certain contaminants or maintain adequate levels of treatment. For example, treatment techniques have been established for viruses, some bacteria, and turbidity.

Lead and Copper Rule: Four (4) PWS were issued treatment technique violations for failure to provide adequate lead public education to customers on the health risks associated with the presence of lead in the drinking water. Of the 4 PWS, one (1) was a small community water system and three (3) were non-community water systems. Two (2) systems have returned to compliance.

Ground Water Rule: No violations were issued for failure to maintain the proper level of treatment.

Significant Monitoring and Reporting Violations: (Table D)

A PWS has specific routine monitoring and reporting requirements to verify that the levels of contaminants present in the water do not exceed the MCL or MRDL. When a PWS fails to comply with these requirements, a public health risk may be created due to the absence of test results where the quality of the system’s water cannot be determined. For calendar year 2013, the DWS issued a total of 3,088 violations to 510 PWS for failure to monitor and report water quality test results. 2,223 of these violations have been returned to compliance.

Through technical assistance and other enforcement strategies, the DWS continues to work to reduce the number of monitoring and reporting violations issued to PWS.

Public Notification Violations: (Table E)

The Public Notification Rule requires all PWS to notify their consumers any time a PWS violated a primary drinking water regulation or has a situation posing a risk to public health. Notices must be provided to persons served (not just billing consumers). For calendar year 2013, the DWS issued 419 violations to 279 PWS for failure to comply with public notification requirements related to maximum contaminant level and/or monitoring and reporting violations. 230 of these violations have been returned to compliance.

Consumer Confidence Report Violations: (Table F)

Every community water system is required to deliver to its customers a brief annual water quality report. This report is to include some educational material, and will provide information on the source water, the levels of any detected contaminants, and compliance with drinking water regulations. For calendar year 2013, the DWS issued 113 violations to 88 community public water systems for failure to submit copies of their 2011 Consumer Confidence Report to the DWS. Fifty-eight (58) of these violations have been returned to compliance.

CONCLUSION

The DPH’s annual “Public Water Systems Compliance Report, Calendar Year 2013” documents the number of systems in Connecticut that incurred violations for MCL exceedances, treatment technique requirements, monitoring and reporting requirements, and public notification requirements. Where a violation occurred, the DWS acted promptly to ensure that the PWS addressed the problem and returned to compliance as quickly as possible. Further enforcement actions were taken against PWS that did not take corrective action to resolve their violations.

Our mission is to protect public health by ensuring the purity and adequacy of drinking water, now and in the future. The Section’s enforcement actions and technical assistance efforts are two of the strategies employed by the DWS to achieve our mission. On behalf of the DPH, the DWS will continue to capitalize on opportunities to promote compliance among the State’s public drinking water systems to achieve this mission.