

OHIO PUBLIC WATER SYSTEM

ANNUAL VIOLATION REPORT

For CALENDAR YEAR 1996

SUMMARY

Ohio Environmental Protection Agency
Division of Drinking and Ground Waters
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Introduction

The 1996 Amendments to the Safe Drinking Water Act requires each State to prepare an Annual Compliance Report summarizing violations incurred by Public Water Systems. The Annual Compliance Report is to be compiled by the State and submitted to U.S. EPA and made available to the public. This report, the first developed by Ohio, summarizes the number and types of violations generated as a result of various public water systems failing to meet certain Safe Drinking Water Act requirements for the 1996 calendar year. The Annual Compliance Report is required to be completed and submitted to U.S. EPA by January 1, 1998 for calendar year 1996.

Ohio's 1996 Annual Compliance Report contains an overview of the Public Water System Program in Ohio; provides summary information on the number, types and population served for public water systems; explains the requirements of annual compliance report; defines the primary categories which violation information are summarized; a summary table of the number and types of violations; and a list of public water system violations for the maximum contaminant level and treatment technique categories.

The Drinking Water Program: An Overview

The 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). For some regulations, U. S. 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 (M/R) requirements. However, the monitoring and reporting requirements vary dependent on which contaminant is being evaluated. In addition, the regulations require public water systems to monitor for unregulated contaminants to provide data for future regulatory development. Finally, public water systems are required to notify the public when they have violated these regulations. The 1996 Amendments to the SDWA require public notification to include a clear and understandable explanation of the nature of the violation, its potential adverse health effects, steps that the public water system is undertaking to correct the violation and the possibility for the need to obtain alternative water supplies during the violation.

The SDWA allows States to seek U.S. EPA approval to administer their own PWSS Programs. The authority to run a PWSS Program is called primacy. To receive primacy, States must meet certain requirements laid out in the SDWA and the 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. *Ohio is a primacy state.*

Regulated Public Water Systems in Ohio

In Ohio, a public water system (PWS) is defined as a system that provides water via piping or other constructed conveyances for human consumption to at least 15 service connections or serves an average of at least 25 people for at least 60 days each year. There are three types of public water systems. Public water systems can be community (such as towns), nontransient noncommunity (such as schools or factories), or transient noncommunity systems (such as rest stops or parks). In addition, Ohio regulates the drinking water systems associated with agricultural migrant labor camps as defined by the Ohio Department of Agriculture even though they may not meet the minimum number of people or service connections. For this report when the acronym “PWS” is used, it means systems of all types unless specified in greater detail. In Ohio, 6,193 public water systems serve approximately 10.6 million people daily. The following table summarizes the total number of public water systems per type with the corresponding total population served daily.

Table 1. Public Water System Summary

PWS Category Type	Number of PWSs per Category	Total Population Served Daily per Category
Community (Comm)	1,453	9,811,472
Nontransient Non-community (NTNC)	1,130	285,816
Transient Non-community (TNC)	3,610	551,816
Total	6,193	10,649,104

Annual State PWS Violation Report

Ohio EPA is required to submit data to U.S. EPA’s Safe Drinking Water Information System (SDWIS/FED) on a quarterly basis. Data include PWS inventory statistics, the incidence of Maximum Contaminant Level, Major Monitoring, and Treatment Technique violations, and the enforcement actions taken against violators. The annual compliance report that States are required to submit to U. S. EPA provides a total annual representation of the numbers of violations for each of the four categories listed in section 1414(c)(3) of the Safe Drinking Water Act reauthorization. This annual report will include information for the 1996 calendar year. These four categories are: MCLs, treatment techniques, significant monitoring violations, and variances and exemptions.

1. *Maximum Contaminant Level*
Under the SDWA, the U.S. 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 MCLs.
2. *Treatment Techniques*
For some regulations, the EPA establishes treatment techniques (TTs) in lieu of an MCL to control unacceptable levels of certain contaminants. For example, treatment techniques have been established for viruses, bacteria, and turbidity.
3. *Monitoring*
A PWS is required to monitor and verify that the levels of contaminants present in the water do not exceed the MCL. If a PWS fails to have its water tested as required, then a monitoring violation occurs. A monitoring violation also includes failure to report test results correctly to the primacy agent.

Significant Monitoring Violations

For this report, significant monitoring violations are defined as any major monitoring violation that has occurred during the specified report interval. A major monitoring violation (except for the Surface Water Treatment Rule and Lead & Copper Initial Monitoring) occurs when no samples were taken or no results are reported during a compliance period. A major Surface Water Treatment Rule M/R violation occurs when fewer than 10% of the required samples are taken or no results are reported during a reporting interval. A minor violation occurs when some but not all of the required numbers of samples are taken. A significant monitoring violation for the Lead & Copper Initial Monitoring period occurs when a public water system failed to perform monitoring in calendar year 1995 followed by a failure to complete the same required monitoring during the 1996 calendar year.

4. *Variances and Exemptions*
Variances and exemptions to specific requirements under the SDWA Amendments of 1996 may be granted under certain circumstances. If, due to the characteristics of the raw water sources reasonably available, a PWS cannot meet the MCL, a primacy State can grant the PWS a variance from the applicable primary drinking water regulation on the condition that the system install the best available technology, treatment techniques, or other means which the Administrator finds are available (taking costs into account). *Ohio did not issue any variance or exemption during the 1996 compliance year.*

Violation Table Summary & Conclusions

A summary table of public water system violations for the 1996 calendar year is included in Appendix A. The information summarized in the table includes total number of violations and total number of systems with a violation for a particular regulated contaminant in three different

categories. These violation categories are maximum contaminant level, treatment technique and significant monitoring/reporting. The regulatory contaminant categories include: organic contaminants; inorganic contaminants; Radionuclide contaminants; total coliform bacteria regulations; surface water treatment regulations; and lead and copper regulations.

By far, the majority of the violations in Ohio occur because public water systems fail to monitor and report for various required contaminants in the period as specified on an individual system monitoring schedule provided by the Director of the Ohio EPA. Other monitoring/reporting violations occur for insufficient number of samples taken during a particular compliance period. A summary of the types and number of violations per regulatory category is present below.

Organic Contaminants

The organic contaminants group summarized in the Violation Table include volatile organic chemicals and a class contaminants referred to as synthetic organic chemicals which include pesticides, primarily. In this group, the violations incurred during the 1996 calendar year all were related to failure to monitor/report during a specified monitoring period except for 5 maximum contaminant level violations. Public water systems (503) with one or more organic contaminant monitoring/reporting violations represent approximately 20% of all public water system subject to the regulations. Of these PWSs with a violation, 97% were associated with PWSs serving less than 1000 people. The maximum contaminant level violations were associated with one community public water system for the combined contaminant, total trihalomethanes. Total trihalomethanes, classified as disinfection by-products, are sampled in the distribution system.

Inorganic Contaminants

The inorganic contaminant group summarized in the Violation Table include metals (e.g. chromium, cadmium, mercury, etc.) and non-metal contaminants (e.g. asbestos, cyanide, nitrate, etc.). In this group, the violations during the 1996 calendar year all were related to failure to monitor/report during a specified monitoring period except for 2 nitrate maximum contaminant level violations. All of the monitoring/reporting violations for the inorganic contaminants, except for nitrate/nitrite, were associated 208 public water systems. Of these, 71% were from public water systems serving less than 500 people.

The most significant number inorganic contaminant monitoring/reporting violations were associated with nitrate. Of the 6,193 public water systems subject to the requirement, 1480 public water systems incurred one or more monitoring/reporting violation during the 1996 calendar year. Of these, 91% (1351) are classified as transient non-community public water systems. The remaining nitrate monitoring/reporting violations were associated with either community or non-transient non-community public water systems. Of these 129 systems with nitrate monitoring/reporting violation, approximately 80% of these public water systems serve 1000 or fewer people.

Radionuclide Contaminants

The radionuclide group includes contaminants gross alpha, gross beta, radium-226 and radium-228. Of all the public water systems required to monitor/report in the 1996 calendar year, only 18 systems incurred a violation. One public water system's monitoring analytical results exceeded the maximum contaminant level for gross alpha.

Total Coliform Regulations

The total coliform regulations establish levels of microbiological contaminants in drinking water. In Ohio, a total coliform test is used to determine whether or not microbiological contaminants are present. Two types, acute and non-acute, of maximum contaminant limit violations are associated with the total coliform regulations. An acute violation can occur when one or more samples collected by a public water system is total coliform positive followed by a confirmation total coliform positive sample. *During the 1996 calendar year, further speciation of positive total coliform as fecal coliform or E. Coli positive were not used to determine when an acute maximum contaminant limit violation occurred.* An acute violation can occur also when a sufficient number of confirmation samples are not collected following one or more positive samples. Non-acute maximum contaminant limit violations occurs when approximately 5% (or 2 or more samples if collecting less than 40 samples) of all the samples collected are total coliform positive. During the 1996 calendar year, 14% (868) of all public water systems incurred one or more total coliform acute or non-acute maximum contaminant limit violations. Of the systems with violations, 75% were associated with transient non-community public water systems. The remaining acute and non-acute violations were associated with public water systems classified as community or non-transient non-community. For the violations associated with these systems, 77% occurred at public water systems serving less than 500 people. A significant number of the acute and non-acute violations can be attributed to the public water system's failure to collect all or a sufficient number of verification samples following a positive total coliform sample.

Major routine and follow-up monitoring/reporting violations for the total coliform regulations are incurred by public water systems when they fail to sample/report for all of the required samples a given monitoring period. During the 1996 calendar year, 33% of all public water systems (201) incurred one or more total coliform monitoring/reporting violation. Of these systems with violations, 88% were associated with transient non-community public water systems. The remaining monitoring/reporting violations occurred at community and non-transient non-community public water systems. For the monitoring/reporting violations associated with these systems, 89% were occurred at systems serving less than 500 people.

Surface Water Treatment Regulations

The surface water treatment regulations in Ohio establish standards for treatment of surface water or ground water under the direct influence of surface water. Public water systems subject to these regulations are required to provide filtration and disinfection of the water. Water quality tests are performed on the water to ensure adherence to standards as specified by the regulations. Tests include evaluation and measure of sufficient chlorination contact time, turbidity levels, and residual chlorine levels in the distribution system. Failure to meet one or more of these standards

results in a monthly treatment technique violation. During the 1996 calendar year, 47 public water systems incurred one or more monthly treatment technique violations. Seven public water systems failed to perform the required monitoring/reporting during a given monthly period.

Lead and Copper Regulations

The lead and copper regulations in Ohio establish standards for levels of lead and copper in the distribution systems of community and non-transient non-community public water systems. During the beginning phases of monitoring, these public water systems are required to perform initial monitoring during two consecutive six month periods. Following completion of these periods, three consecutive annual routine monitoring periods are required. For the 1996 calendar year, the significant monitoring/reporting violations for the initial lead and copper monitoring requirements are based on a public water system failure to conduct the required sampling during the 1995 calendar year followed by failure to complete the same requirement during the 1996 calendar year. During calendar year 1996, 22 public water systems have been identified as being significant monitoring and reporting violations; and 202 public water systems failed to conduct routine annual monitoring. One public water system failed to install adequate treatment for the lead and copper by a specified date.

Ohio EPA's Public Water System Compliance Assistance

Ohio EPA employs various methods to assist public water systems in achieving compliance of the Safe Drinking Water Act regulations. Some of these methods include: providing a sampling and monitoring schedule for each public water system; offering technical assistance during facility inspections (sanitary surveys) and all office hours; distributing a divisional newsletter to all public water systems; providing operator and laboratory personnel training sessions; distributing reminder postcards and/or contacting the public water systems towards the end of the monitoring periods to ensure collection of the required samples; and providing notice of violation letters for failure to meet the requirements of any of the specific regulations.

Listing of Violations

A listing of the individual monitoring/reporting, maximum contaminant limit and treatment technique violations used to create the summary numbers presented in Appendix A is available for review at the Ohio EPA Division of Drinking and Ground Waters Central Office as well as the Ohio District Office locations. A list of violations can also be viewed using the Internet at U.S. EPA's site known as "Envirofacts". This Internet site provides access to a subset of data available from U.S. EPA's Safe Drinking Water Information System (SDWIS). Using this Envirofacts web site allows the user to select by state, county, public water system name, public water system identification number or population size to obtain general facility and violation information for public water systems in Ohio. The Internet address for this Envirofacts site is http://www.epa.gov/enviro/html/sdwis/sdwis_query.html.

Contact Information

For further information concerning this report, you may contact Michael Eggert or Bernie Clark with the Ohio EPA Division of Drinking and Ground Waters at (614) 644-2752. If you have questions concerning the violations associated with individual public water systems, contact your local Ohio EPA District Office in your region.

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