

**OHIO'S PUBLIC WATER SYSTEMS
ANNUAL COMPLIANCE REPORT**

For

CALENDAR YEAR 1999

Summary

**Ohio Environmental Protection Agency
Division of Drinking and Ground Waters
June 30, 2000**

TABLE OF CONTENTS

Introduction	1
The Drinking Water Program: An Overview	1
Regulated Public Water Systems in Ohio	2
Annual State PWS Compliance Report	2
<i>Maximum Contaminant Level</i>	3
<i>Treatment Techniques</i>	3
<i>Monitoring</i>	3
<i>Variances and Exemptions</i>	3
Compliance Table Summary Analysis	4
<i>Organic Contaminants</i>	6
<i>Inorganic Contaminants</i>	8
<i>Radionuclide Contaminants</i>	11
<i>Total Coliform Regulations</i>	12
<i>Surface Water Treatment Regulations</i>	14
<i>Lead and Copper Regulations</i>	15
Ohio EPA's Public Water System Compliance Assistance	17
Listing of Violations	17
Report Availability and Contact Information	18
APPENDIX A: COMPLIANCE SUMMARY TABLE	

List of Tables

Table 1.	Public Water System Summary	2
Table 2.	Violations Totals and Compliance Rate per Contaminant Group Category for 1999	4
Table 3.	Violation Totals for 1999	5
Table 4.	Enforcement Action Code Types	18

List of Figures

Figure 1.	Percentage Distribution of PWSs with Violations per System Type and Population Served Category	5
Figure 2.	Systems with Organic Contaminant Monitoring/Reporting Violations by System Type	7
Figure 3.	Systems with Organic Contaminant Monitoring/Reporting Violations by Population Categories	8
Figure 4.	Systems with Inorganic Contaminant Monitoring/Reporting Violations by System Type	10
Figure 5.	Systems with Inorganic Contaminant Monitoring/Reporting Violations by Population Categories	10
Figure 6.	Community Systems with Radionuclide Contaminant Monitoring/Reporting Violations by Population Categories	11
Figure 7.	Systems with Total Coliform MCL (Acute and Non-Acute) and Significant Monitoring/Reporting Violations by Population Categories	13
Figure 8.	Systems with Total Coliform MCL (Acute and Non-Acute) and Significant Monitoring/Reporting Violations by System Type	13
Figure 9.	Systems with Surface Water Treatment Rule Monitoring/Reporting and Treatment Technique Violations by System Type	14
Figure 10.	Systems with Surface Water Treatment Rule Monitoring/Reporting and Treatment Technique Violations by Population Categories	15
Figure 11.	Systems with Lead and Copper Significant Initial and Follow-up/Routine Monitoring/Reporting Violations by Population Categories	16
Figure 12.	Systems with Lead and Copper Significant Initial and Follow-up/Routine Monitoring/Reporting Violations by System Type	16

Introduction

The 1996 Amendments to the Safe Drinking Water Act require 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 summarizes compliance rates and 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 calendar year 1999.

Ohio's 1999 Annual Compliance Report contains an overview of the Public Water System Supervision Program in Ohio; provides summary information on the number, types and population served for public water systems; explains the requirements of the annual compliance report; defines the primary categories for which violation information are summarized; a summary table of the number and types of violations; an analyze of public water system compliance with the regulations; and a list of public water system violations for the maximum contaminant level and treatment technique categories.

The Drinking Water Program: An Overview

U.S. 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 and 1996 Amendments, 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 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 U.S. EPA. Generally, the larger the population served by a water system, the more frequent the monitoring and reporting (M/R) requirements. However, the M/R 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 1986 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 set forth in the SDWA and the regulations, including the adoption of drinking water regulations that are at least as stringent as the Federal regulations and provide 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 piped water 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), non-transient non-community (such as schools or factories), or transient non-community 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, 5,901 public water systems serve approximately 10.9 million people daily with an average production of approximately 1.7 billion gallons of water per day. This yields an average water use of 154 gallons per person per day. 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	1,421	10,147,233
Non-transient Non-community (NTNC)	1,098	275,143
Transient Non-community (TNC)	3,382	541,251
Total	5,901	10,963,627

Annual State PWS Compliance Report

Ohio EPA submits 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 (MCL), major monitoring, and treatment technique violations, and the enforcement actions taken against violators. This Annual Compliance Report provides a total annual representation of the number of violations for each of the four categories listed in section 1414(c)(3) of the Safe Drinking Water Act

re-authorization. This report will analysis violation and compliance information for the 1999 calendar year using four categories: MCLs, treatment techniques, significant monitoring violations, and variances and exemptions.

1. *Maximum Contaminant Level*

Under the SDWA, 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 State.

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 occurs when no samples were taken or no results are reported during a compliance period.

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, the 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 variances or exemptions during the 1999 compliance year.*

Compliance Table Summary Analysis

A summary table of public water system compliance rates and violations for the 1999 calendar year is included in Appendix A. The information summarized in the table includes the total number of public water systems required to monitor during the 1999 calendar year; total number of violations; total number of systems with a violation; and percent compliance achieved for a particular regulated contaminant in three different violation categories. These violation categories are MCL, TT and significant M/R. The regulatory contaminant categories include: organic contaminants; inorganic contaminants; radionuclide contaminants; total coliform bacteria regulations; surface water treatment regulations; and lead and copper regulations.

State totals for each violation category and the contaminant group compliance rate is presented the Table 2. The total number of violations and total number of water systems with at least one violation is presented in Table 3. The overall compliance rate for all requirements is 66 percent, a five percent increase over 1998. Compliance rates for each Contaminant Category is presented in Table 2. Fifty percent of the water systems with violations incurred only one violation during 1999. As depicted in Figure 1, of all water systems with at least one violation, 62 percent were associated with TNC water systems, 21 percent with NTNC water systems and 17 percent with community water systems. Nearly 90 percent of the PWSs having one or more violations were associated with a population served category of serving fewer than 500 people per day. Over 80 percent 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 or as a result of follow-up or repeat sampling. Other M/R violations occur for insufficient number of samples taken during a particular compliance period. A detailed analysis of each contaminant group and violation category is presented below. When sufficient data was available, charts displaying the number of water systems with a violation per system type and population categories have been prepared and included in this report.

Table 2. Violations Totals and Compliance Rate per Contaminant Group Category for 1999

Contaminant Category	MCL			Treatment Technique			Monitoring		
	Violations	Systems in Violation	Comp. Rate	Violations	Systems in Violation	Comp. Rate	Violations	Systems in Violation	Comp. Rate
MCL Contaminant Group	15	10	99.8%				3,210	678	89 %
TCR	1,030	687	88%				1,799	1,232	88%
SWTR				166	31	82%	3	1	99%
Lead and Copper				11	11	99%	141	127	91%

Table 3. State of Ohio Violation Totals for 1999

State of Ohio Data	
Total Number of Systems in Violation	2,024
Total Number of Violations	6,375

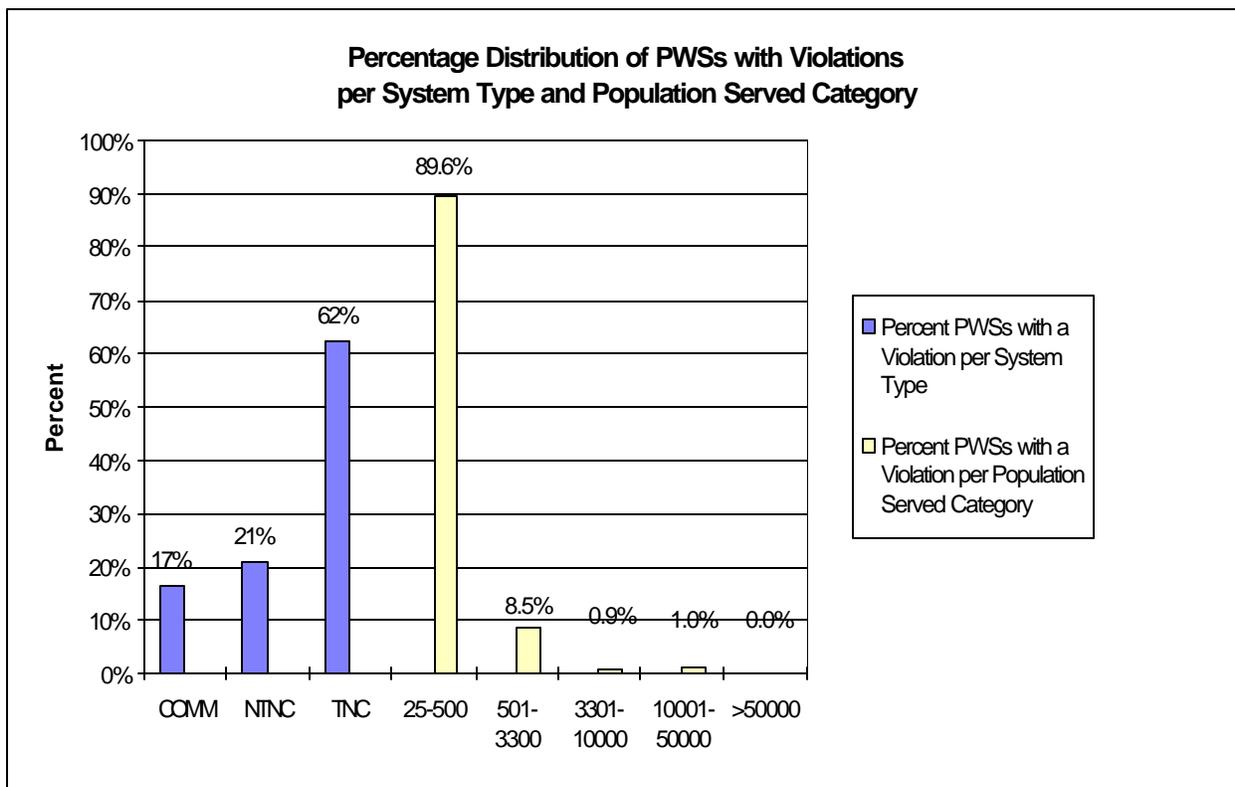


Figure 1.

Organic Contaminants

The organic contaminants group summarized in the Compliance Table include: volatile organic chemicals (VOCs); a class of contaminants referred to as synthetic organic chemicals (SOCs) which primarily include pesticides; and total trihalomethanes (TTHMs).

VOCs are monitored by all community and NTNC PWSs (except purchased water systems) on one of three schedules: one sample quarterly for initial monitoring; one sample annually after initial monitoring; or one sample in 3 years (for ground water systems after meeting annual monitoring requirements). During 1999, 1,037 public water systems were required to sample at least once of VOCs. This is approximately half the number required during 1998 because many systems received reduced monitoring requirements. Another significant difference between monitoring for VOCs and other contaminant groups is that every time a PWS samples for VOCs, they are required to have the sample analyzed for all 21 regulated VOC compounds using one analytical method which scans for all of the compounds. So, for each missed VOC sample, a PWS would have 21 violations for the regulated VOC compounds. This creates an artificially high number of violations for the VOC group as well as the total number of violations issued in Ohio. As required to be presented in this report, there are 1,533 individual VOC compound M/R violations. This really represents 73 VOC samples which were not collected. Only 64 of the 1,037 public water systems required to sample during 1999 failed to collect one or more samples which resulted in a M/R violation. Overall compliance for the VOC M/R is 94 percent. Approximately two-thirds of the VOC M/R violations were associated with NTNC systems. Of those public water systems with a VOC M/R violation, approximately 90 percent were associated with water systems serving less than 500 people.

VOC Contaminant Group Highlights

- < 1,037 public water systems required to collect VOC samples
- < 100 percent compliance with all VOC MCLs
- < 94 percent of the public water systems are in compliance for the VOC M/R category
- < 73 VOC group M/R violations
- < Approximately 90 percent of the VOC M/R violations occurred at public water systems serving less than 500 people

SOCs are monitored by all (except purchased systems) community and NTNC PWSs depending on which of the individual compound monitoring waiver the system may have received. Monitoring waivers are granted on the basis of the PWS not being susceptible (either by taking a sample or a determination by Ohio EPA that the SOC is not present at or near the PWS) to contamination by the particular SOC being waived. The waivers are granted for a 3-year period and must be renewed when that period lapses or sampling would be required. Some PWSs may be monitoring for SOC's more frequently due to detections in prior sampling events. During the 1999 calendar year, 2321 public water system were required to sample for up the five most commonly detected compounds: alachlor, atrazine, metholachlor, metribuzin and simazine. Only a few public water systems were required to monitor for up to 19 additional SOC compounds. All of the SOC violations incurred during the 1999

calendar year were related to M/R requirements. No public water systems incurred a SOC MCL during 1999. The overall M/R compliance rate for 1999 is 91 percent.

SOC Contaminant Group Highlights

- < 2321 public water systems required to sample for SOCs
- < 100 percent compliance with all SOC MCLs
- < 91 percent of the public water systems were in compliance for SOC M/R
- < 86 percent of the M/R violations which occurred were for public water systems serving fewer than 500 people

Total Trihalomethanes (TTHMs), classified as disinfection by-products, are sampled in the distribution system by community PWSs that disinfect and have a population of 10,000 or greater. PWSs monitor for TTHMs on a quarterly basis. During the 1999 calendar year, 141 systems were required to perform TTHM monitoring. Overall compliance with TTHMs M/R is 99 percent. No public water system recorded MCL violations based on an running annual quarterly averages of TTHM exceeding 100 milligrams per liter.

TTHM Contaminant Group Highlights

- < 141 community public water systems required to sample for TTHMs
- < 99 percent of the public water systems were in compliance for TTHMs M/R
- < 100 percent compliance with the TTHM MCL

For specific information on each contaminant, such as the number of PWSs required to sample a contaminant in 1999 and how many violations occurred for that contaminant, please refer to the Appendix A Compliance Table.

Figure 2.

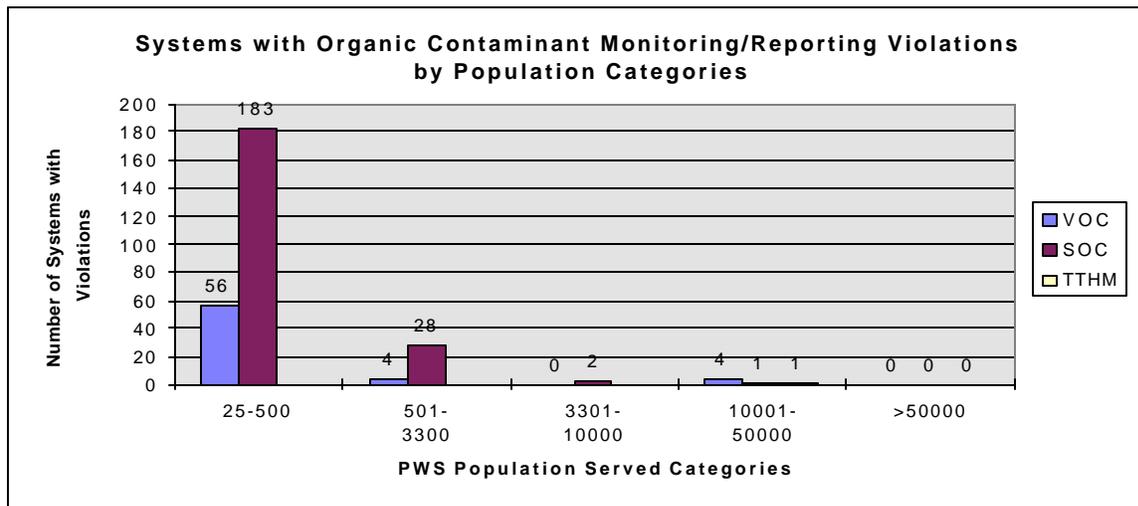
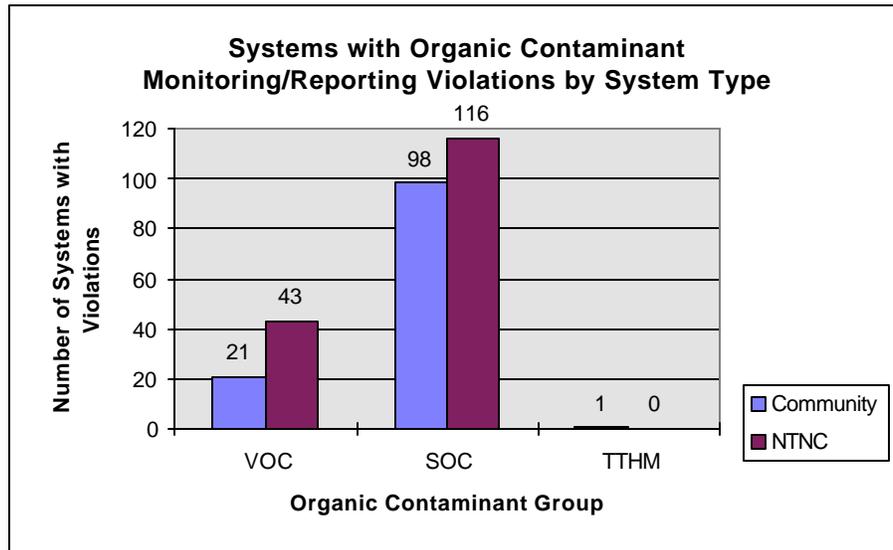


Figure 3.



Inorganic Contaminants

The inorganic contaminant group summarized in the Appendix A Compliance Table includes metals (e.g. chromium, cadmium, mercury, etc.) and non-metal contaminants (e.g. asbestos, cyanide, nitrate, etc.). Nitrate and nitrite are separated out as a group from the other inorganics (IOCs) for monitoring purposes.

IOCs are monitored by all (except purchased systems) community and NTNC PWSs. Most IOCs are monitored by surface water systems on an annual basis and by ground water systems once in 3 years. One exception is asbestos, which is monitored once in 9 years. IOC monitoring may also be waived for eligible systems. During the 1999 calendar year, 826 public water systems were required to sample for up to 13 individual IOC compounds. IOC violations incurred during the 1999 calendar year were all related to M/R during a specified period. The overall M/R compliance rate for the IOC contaminant group is 93 percent. Of the 87 water systems with an IOC M/R violation, approximately half were community and half were NTNC water systems. However, 83 percent of all violations were associated with water systems serving less than 500 people.

IOC Contaminant Group Highlights

- < 826 public water systems were required to sample for IOCs
- < 100 percent compliance with all IOC MCLs
- < 93 percent of the public water systems were in compliance for IOC M/R
- < 83 percent of the M/R violations were associated with public water systems serving fewer than 500 people

Nitrate/nitrite are monitored by all (except purchased systems) community, NTNC, and TNC PWSs. Nitrate is monitored monthly by surface water systems and annually by ground water systems. Some ground water systems may be monitoring quarterly for nitrate based upon the levels reported in previous sampling. Nitrite is generally monitored once by each system. During the 1999 calendar year, 5,861 water systems were required to monitor for nitrate and 236 water systems were required to monitor for nitrite.

The overall compliance rate for nitrate/nitrite M/R is 93percent, an increase of 7 percent from 1998. Of the 412 water systems with a violation during the 1999 calendar year, 72 percent were issued to TNC water systems and 91 percent were associated with systems serving fewer than 500 people.

The highest number of MCL violations for any chemical parameter was associated with nitrate. During the 1999 calendar year, 11 nitrate MCL violations occurred at 9 water systems. These occurrences typically last for a short duration. It is important to note that 99.8 percent of all systems did not have an MCL violation.

Nitrate/Nitrite Contaminant Group Highlights

- < 5861 public water systems were required to sample for nitrate and/or nitrite
- < 99.8 percent compliance rate for nitrate MCLs
- < 11nitrate MCL violations occurred at 9 water systems
- < 86 percent of the public water systems were in compliance for nitrate/nitrite M/R
- < Only 412 water systems received a nitrate/nitrite M/R violation during 1999 compared to 842 water systems during 1998
- < 91 percent of the M/R violations were associated with public water systems serving fewer than 500 people

For specific information on each contaminant, such as the number of PWSs required to sample a contaminant in 1999 and how many violations occurred for that contaminant, please refer to Appendix A.

Figure 4.

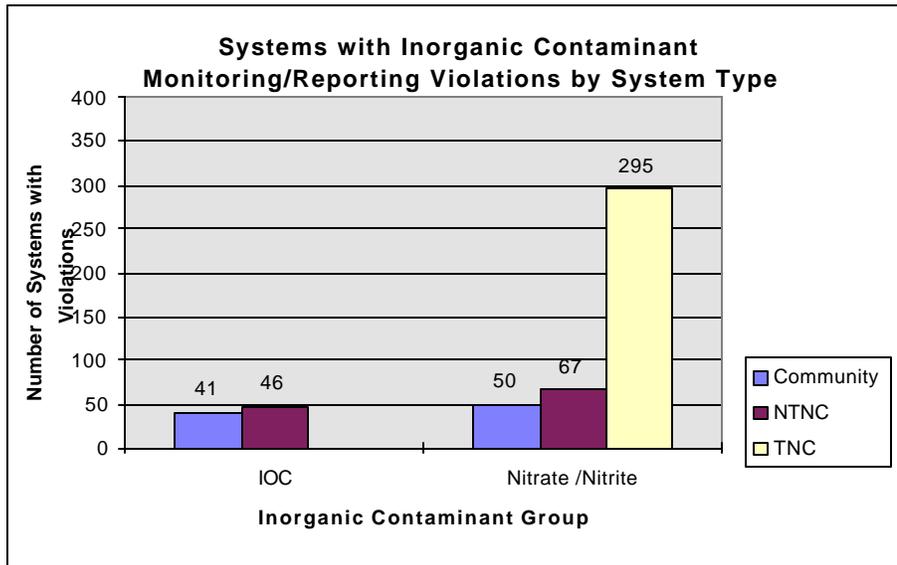
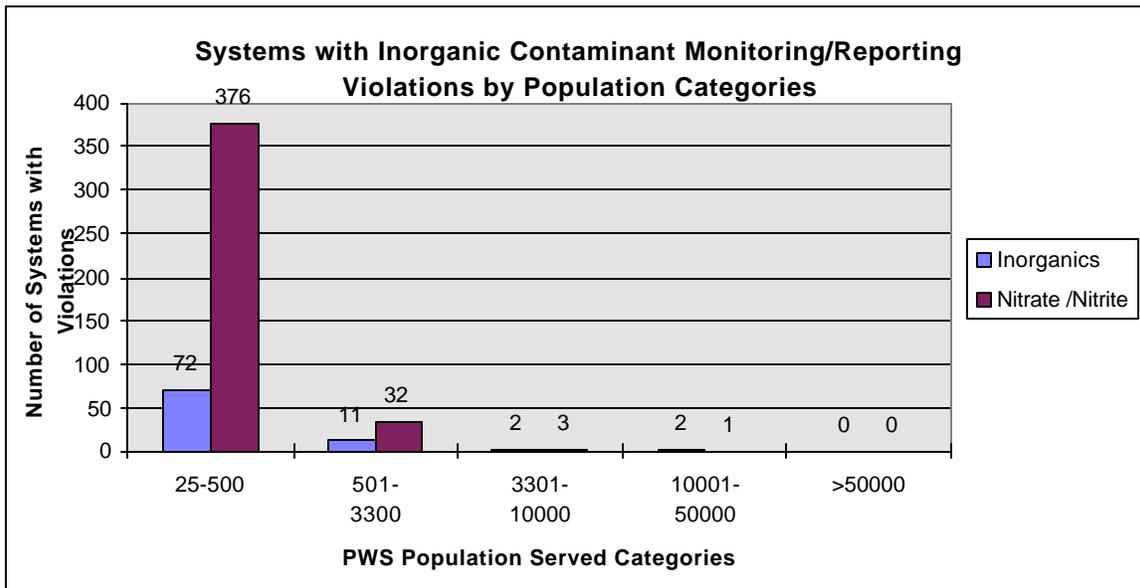


Figure 5.



Radionuclide Contaminants

The radionuclide group includes the contaminants gross alpha, gross beta, radium-226 and radium-228. Radium-226 and radium-228 are only monitored individually when a PWS exceeds the gross alpha action level of 5 pCi/L, otherwise that are considered part of the gross alpha analysis.

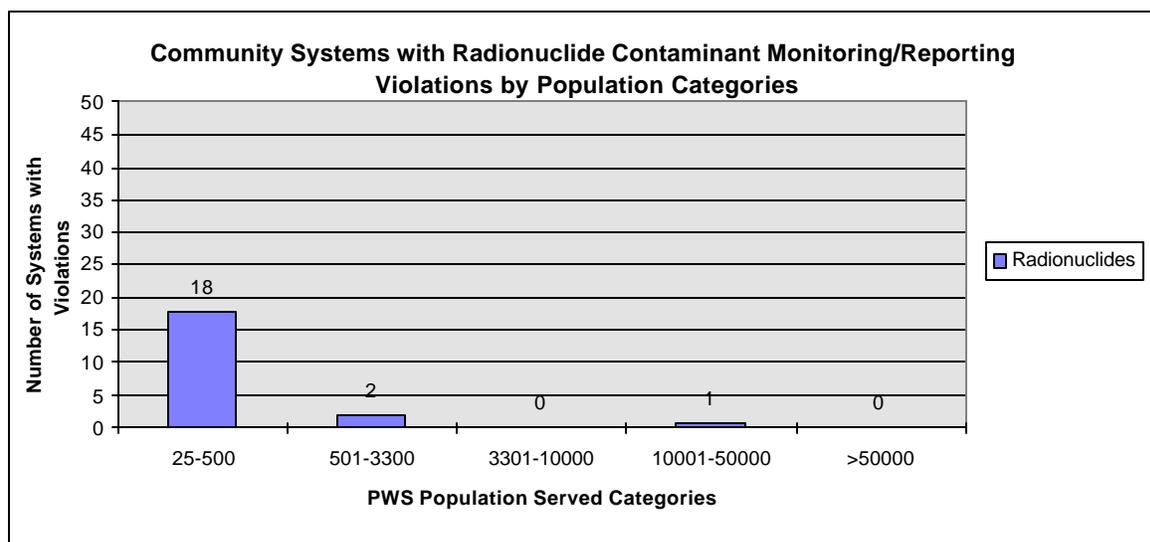
Radionuclides are monitored by all (except purchased systems) community PWSs. In general, surface water systems monitor gross alpha and beta quarterly initially and annually thereafter, and ground water systems monitor initially for gross alpha quarterly and then once every 3 years thereafter. During the 1999 calendar year, 459 water systems were required to monitor for radionuclides. The overall radionuclide MCL compliance rate is 99.8 percent. Only one water system incurred a MCL violation for radium 226/228. The overall compliance rate for radionuclide M/R is 95 percent. Of the 21 water systems with a violation during the 1999 calendar year, 86 percent were associated with systems serving fewer than 500 people.

Radionuclides Contaminant Group Highlights

- < 459 public water systems were required to sample for radionuclides
- < 99.8 percent compliance rate for radionuclide MCLs
- < One radium 226/228 MCL violations occurred at 1 water system
- < 95 percent of the water systems were in compliance for radionuclides M/R
- < 86 percent of the M/R violations were associated with public water systems serving fewer than 500 people

For specific information on each contaminant, such as the number of PWSs required to sample a contaminant in 1999 and how many violations occurred for that contaminant, please refer to Appendix A.

Figure 6.



Total Coliform Regulations

The total coliform regulations establish levels of microbiological contaminants in drinking water. In Ohio, a total coliform (TC) test is used initially to determine whether or not microbiological contaminants are present. If sample is TC positive, the system must the further analysis it for either fecal coliform and *E. Coli* and collect additional conformation samples. TC is monitored by all PWSs. The frequency of TC testing and the number of samples collected is dependent upon the type of PWS and the population served. Sampling requirements range from as few as one TC sample per quarter for TNC water systems to hundreds of TC samples per month for large community water systems. Two types of MCL violations , acute and non-acute, 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 sample which is further analyzed to determine whether the positive TC is either fecal coliform or *E. Coli* positive. An acute violation can also occur when a sufficient number of confirmation samples are not collected following one or more positive samples. Non-acute MCL violations occur when greater than 5 percent (or 2 or more samples if collecting less than 40 samples) of all the samples collected are TC positive.

During the 1999 calendar year, the compliance rate for TC acute MCL violations is 94 percent and 92 percent for non-acute MCL violations. Of the water systems with TC MCL violations, 73 percent were associated with TNC water systems, and 92 percent were water systems serving less than 500 people. A significant number of the acute and non-acute violations can be attributed to a water system's failure to collect all or a sufficient number of confirmation samples following a positive total coliform sample. Major routine and follow-up M/R violations for the TC regulations are incurred by water systems when they fail to sample for or report all of the required samples during a given monitoring period. During the 1999 calendar year, the overall compliance rate for TC M/R is 79 percent. Of the water systems with one or more major routine and follow-up M/R violations, 76 percent were associated with TNC water systems and 95 percent were associated with water systems serving less than 500 people.

Total Coliform Contaminant Group Highlights

- < 5,901 public water systems were required to sample for TC
- < 94 percent compliance with the acute MCL
- < 79 percent compliance with the TC M/R requirements
- < 95 percent of the M/R violations and 92 percent of MCL violations were associated with public water systems serving fewer than 500 people, the majority being associated with TNC water systems

Figure 7.

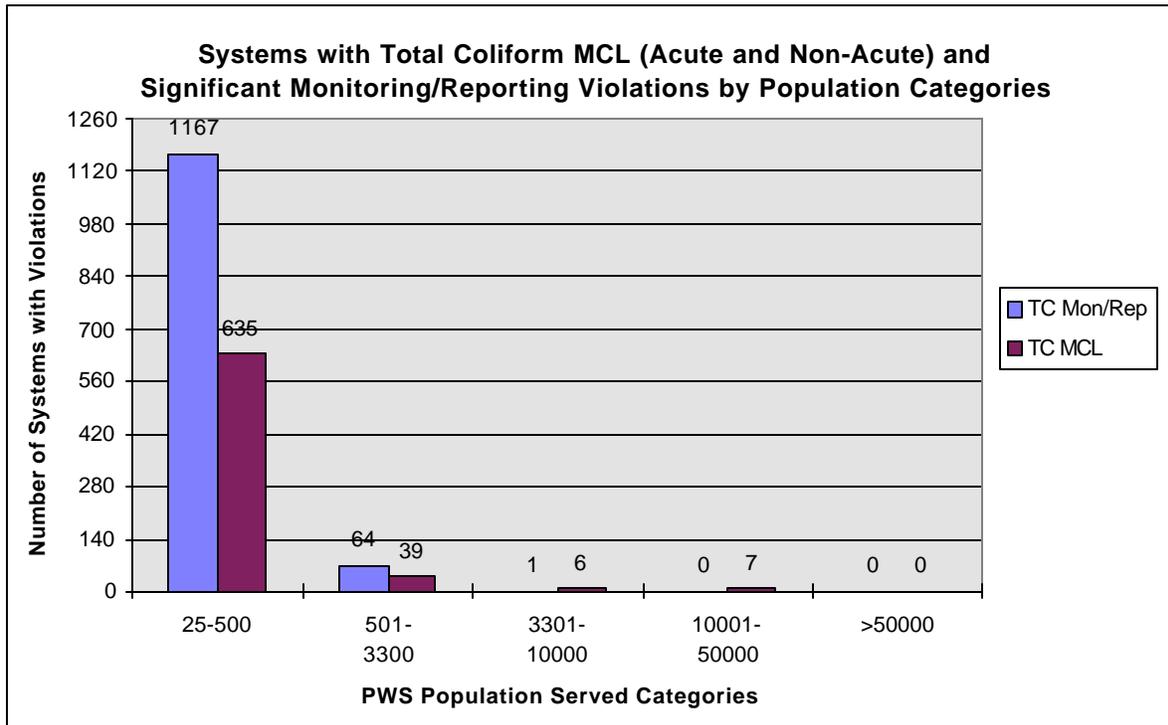
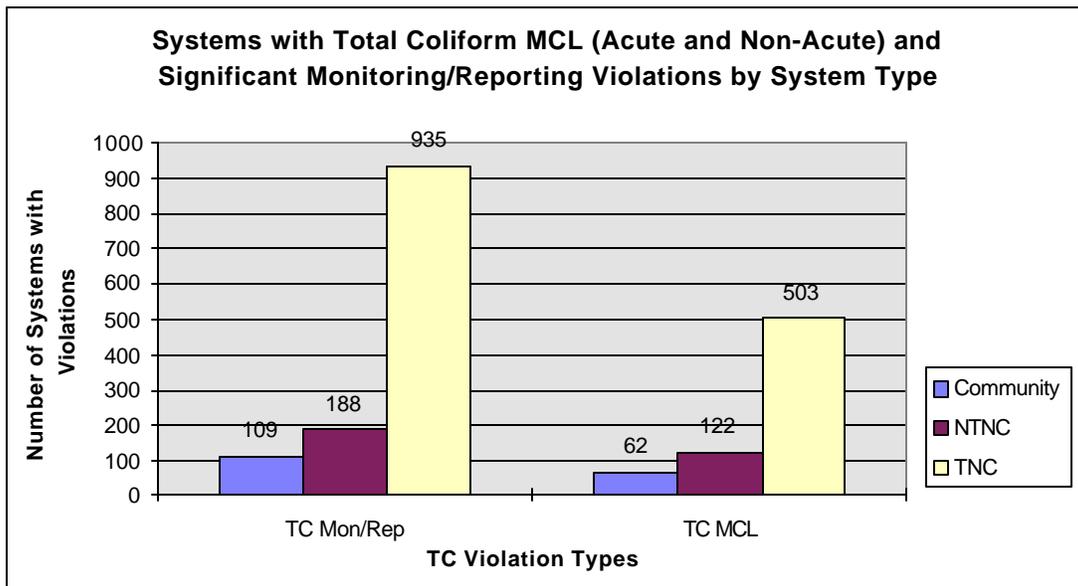


Figure 8.



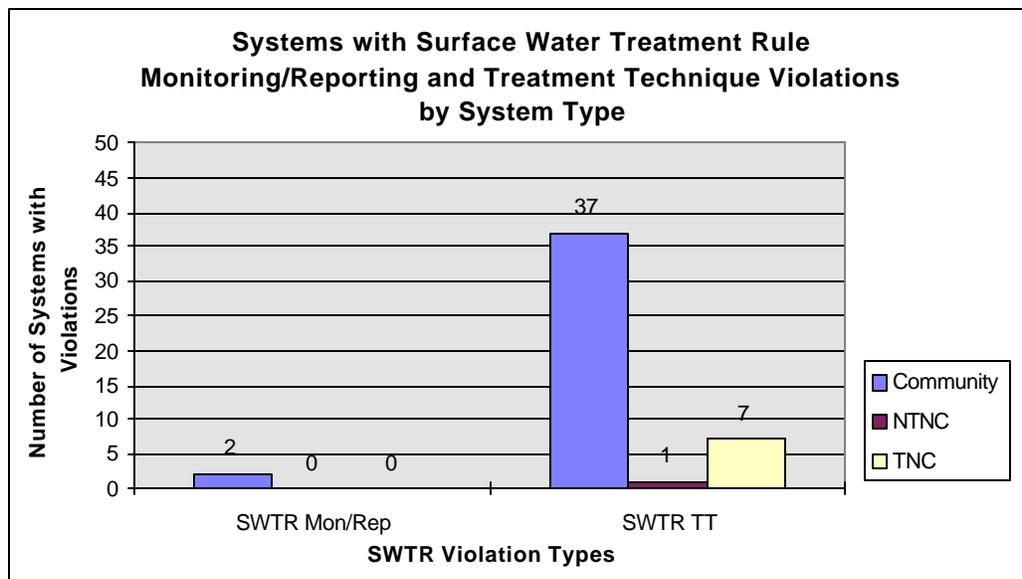
Surface Water Treatment Regulations

The surface water treatment regulations (SWTR) in Ohio establish treatment and monitoring standards for water systems that have sources designated as 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 TT violation. During the 1999 calendar year, 173 water systems were subject to the SWTR TT and M/R requirements. The overall SWTR TT compliance rate is 82 percent. The majority of water systems with these violations are those that have recently been designated as surface water systems due to having a source designated as ground water under the direct influence of surface water. The overall compliance rate for SWTR M/R is 99 percent. Of the 31 water systems with a TT violation during the 1999 calendar year, 45 percent were associated with systems serving fewer than 500 people.

SWTR Contaminant Group Highlights

- < 173 public water systems were subject to the SWTR monitoring and treatment requirements
- < 82 percent of the public water systems were in compliance with the TT requirements
- < 99 percent of water systems which provide treatment were in compliance with the SWTR M/R requirements
- < 45 percent of the water systems with a TT violations were associated with water systems serving fewer than 500 people

Figure 9.



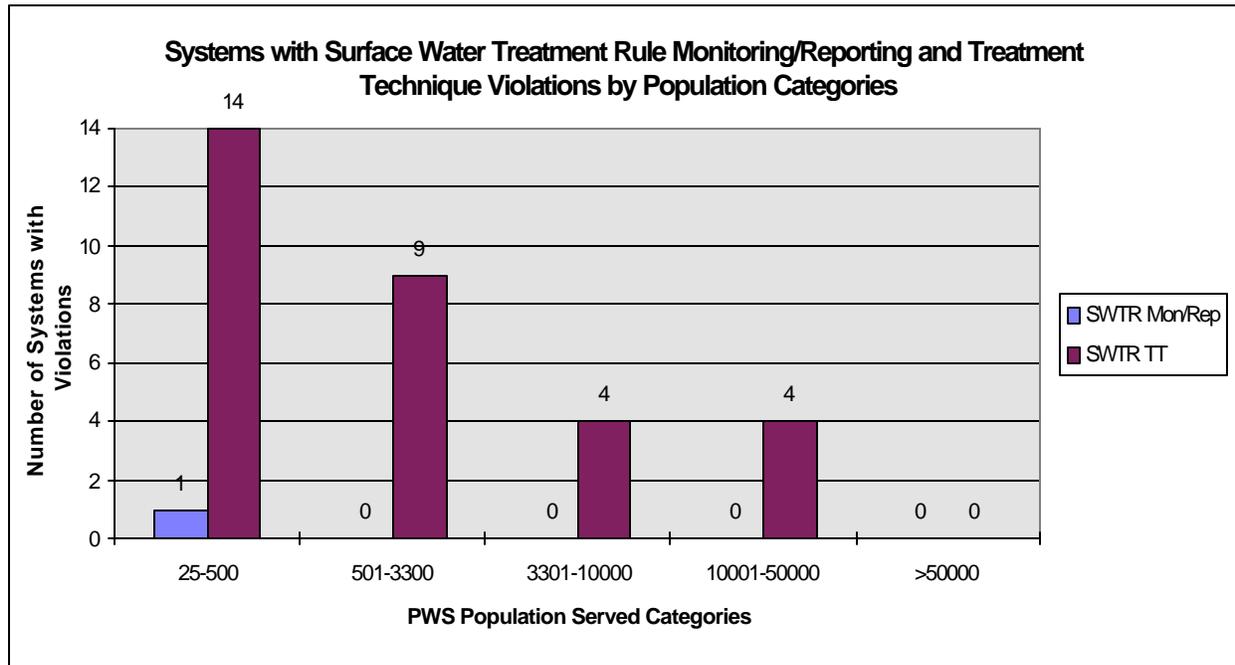


Figure 10.

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 NTNC 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, routine annual or triennial monitoring periods are required. For the 1999 calendar year, 87 water systems were required to perform initial monitoring and 1,336 systems were required to perform either annual or triennial monitoring. In addition, 41 systems were required to perform public education notifications due to an exceedance of the lead action level. The overall compliance for lead and copper monitoring is 91 percent. Of the 127 water systems with a lead and copper M/R violation, 94 percent were associated with systems serving fewer than 500 people.

Lead and Copper Contaminant Group Highlights

- < 1,423 public water systems were subject to the lead and copper M/R, treatment installation and public education requirements
- < 91 percent of water systems were in compliance with the lead and copper M/R requirements
- < 94 percent of the water systems with a lead and copper M/R violation were associated with public water systems serving fewer than 500 people

Figure 11.

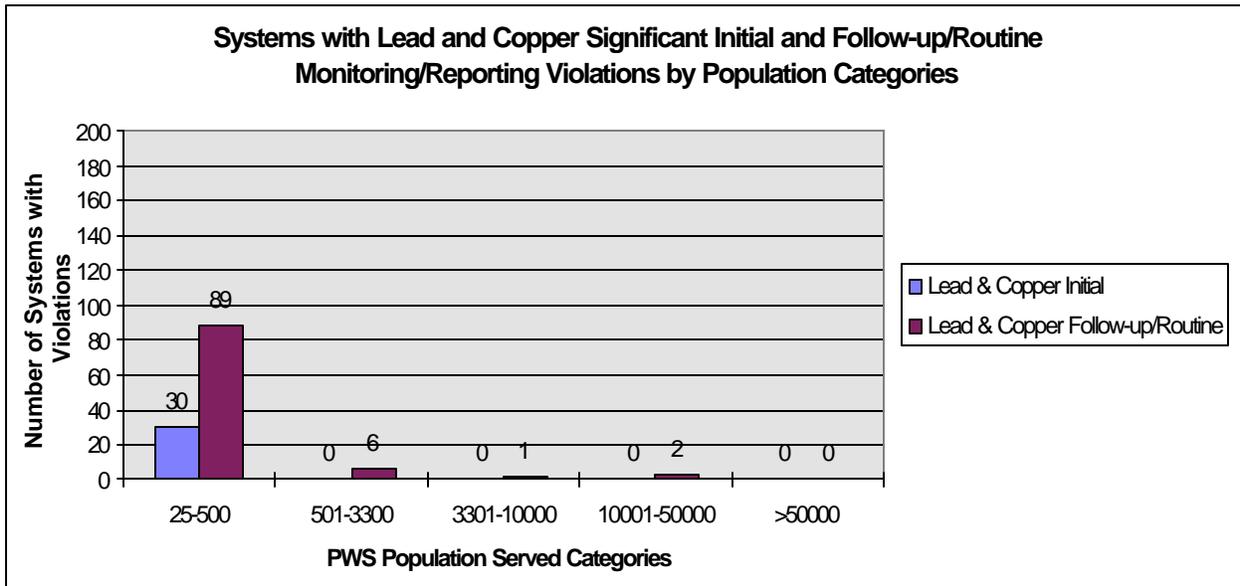
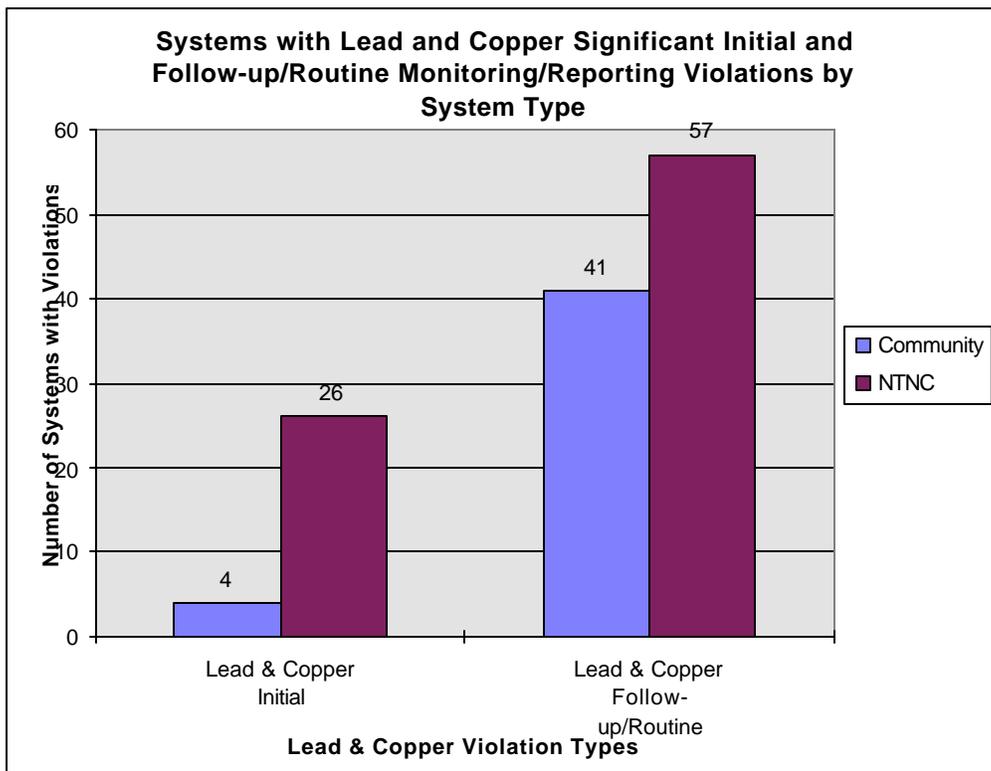


Figure 12.



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; distribution of divisional newsletter to water systems; providing operator and laboratory personnel training sessions; distributing reminder postcards and/or contacting the water systems towards the end of the monitoring period to ensure collection of the required samples; and sending notice of violation letters for failure to meet the requirements for each specific regulation.

Listing of Violations

A complete listing of all violations (i.e, monitoring/reporting, maximum contaminant level, treatment technique) associated with each of the public water systems used to create the summary table presented in Appendix A is available for review at the Ohio EPA Division of Drinking and Ground Waters Central Office and District Office locations. A list of violations can also be viewed using the Internet at U.S. EPA's site know 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 the Envirofacts website allows the user to select by state, county, public system name, public water system identification number and population size to obtain general facility information 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.

Report Availability and Contact Information

The 1999 summary report may be obtained by writing to the State of Ohio at: PWS Annual Compliance Report, Ohio EPA - DDAGW, Lazarus Government Center, P.O. Box 1049, Columbus, OH 43216-1049. In addition, this summary report has been posted on the Ohio EPA's Website at <http://www.epa.state.oh.us/ddagw/annualreports.html>.

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

David Greenwood
Ohio EPA

Central District Office
3232 Alum Creek Drive
Columbus, Ohio 43207
(614) 728-3778

Janet Barth
Ohio EPA

Southeast District Office
2195 Front Street
Logan, Ohio 43138
(740) 385-8501

Steve Severyn
Ohio EPA

Southwest District Office
401 East 5TH Street
Dayton, Ohio 45402
(937) 285-6357

Doug Scharp
Ohio EPA

Northwest District Office
347 N. Dunbridge Road
Bowling Green, Ohio 43402
(419) 352-8461

Nancy Rice
Ohio EPA

Northeast District Office
2110 E. Aurora Road
Twinsburg, Ohio 44087
(330) 963-1200

APPENDIX A:

COMPLIANCE SUMMARY TABLE

Appendix A Compliance Table

State:	OHIO
Reporting Interval:	JANUARY 1, 1999 - DECEMBER 31, 1999

SDWIS Codes		MCL (mg/L) ¹	Number of Systems Required to Sample during 1999	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance
	Organic Contaminants											
2981	1,1,1-Trichloroethane	0.2	1037	0	0	100.0%				73	64	93.8%
2977	1,1-Dichloroethylene	0.007	1037	0	0	100.0%				73	64	93.8%
2985	1,1,2-Trichloroethane	0.005	1037	0	0	100.0%				73	64	93.8%
2378	1,2,4-Trichlorobenzene	0.07	1037	0	0	100.0%				73	64	93.8%
2931	1,2-Dibromo-3-chloropropane (DBCP)	0.0002	NA	0	0	NA				0	0	NA
2980	1,2-Dichloroethane	0.005	1037	0	0	100.0%				73	64	93.8%
2983	1,2-Dichloropropane	0.005	1037	0	0	100.0%				73	64	93.8%
2063	2,3,7,8-TCDD (Dioxin)	3x10 ⁻⁸	NA	0	0	NA				0	0	NA
2110	2,4,5-TP	0.05	NA	0	0	NA				0	0	NA
2105	2,4-D	0.07	1	0	0	100.0%				0	0	100.0%
2265	Acrylamide						0	0	100.0%			

State:	OHIO
Reporting Interval:	JANUARY 1, 1999 - DECEMBER 31, 1999

SDWIS Codes		MCL (mg/R) ¹	Number of Systems Required to Sample during 1999	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance
2051	Alachlor	0.002	2321	0	0	100.0%				208	208	91.0%
2050	Atrazine	0.003	2321	0	0	100.0%				208	208	91.0%
2990	Benzene	0.005	1037	0	0	100.0%				73	64	93.8%
2306	Benzo[a]pyrene	0.0002	2	0	0	100.0%				1	1	50.0%
2046	Carbofuran	0.04	1	0	0	100.0%				0	0	100.0%
2982	Carbon tetrachloride	0.005	1037	0	0	100.0%				73	64	93.8%
2959	Chlordane	0.002	NA	0	0	NA				0	0	NA
2380	cis-1,2-Dichloroethylene	0.07	1037	0	0	100.0%				73	64	93.8%
2031	Dalapon	0.2	NA	0	0	NA				0	0	NA
2035	Di(2-ethylhexyl)adipate	0.4	1	0	0	100.0%				0	0	100.0%
2039	Di(2-ethylhexyl)phthalate	0.006	76	0	0	100.0%				13	10	86.8%
2964	Dichloromethane	0.005	1037	0	0	100.0%				73	64	93.8%
2041	Dinoseb	0.007	NA	0	0	NA				0	0	NA
2032	Diquat	0.02	2	0	0	100.0%				0	0	100.0%

State:	OHIO
Reporting Interval:	JANUARY 1, 1999 - DECEMBER 31, 1999

SDWIS Codes		MCL (mg/R) ¹	Number of Systems Required to Sample during 1999	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance
2033	Endothall	0.1	2	0	0	100.0%				1	1	50.0%
2005	Endrin	0.002	NA	0	0	NA				0	0	NA
2257	Epichlorohydrin						0	0	NA			
2992	Ethylbenzene	0.7	1037	0	0	100.0%				73	64	93.8%
2946	Ethylene dibromide	0.00005	NA	0	0	NA				0	0	NA
2034	Glyphosate	0.7	1	0	0	100.0%				0	0	100.0%
2065	Heptachlor	0.0004	NA	0	0	NA				0	0	NA
2067	Heptachlor epoxide	0.0002	NA	0	0	NA				0	0	NA
2274	Hexachlorobenzene	0.001	NA	0	0	NA				0	0	NA
2042	Hexachlorocyclopentadiene	0.05	NA	0	0	NA				0	0	NA
2010	Lindane	0.0002	1	0	0	100.0%				0	0	100.0%
2015	Methoxychlor	0.04	1	0	0	100.0%				0	0	100.0%
2989	Monochlorobenzene	0.1	1037	0	0	100.0%				73	64	93.8%
2968	o-Dichlorobenzene	0.6	1037	0	0	100.0%				73	64	93.8%
2969	p-Dichlorobenzene	0.075	1037	0	0	100.0%				73	64	93.8%

State:	OHIO
Reporting Interval:	JANUARY 1, 1999 - DECEMBER 31, 1999

SDWIS Codes		MCL (mg/R) ¹	Number of Systems Required to Sample during 1999	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance
2383	Total polychlorinated biphenyls	0.0005	1	0	0	100.0%				0	0	100.0%
2326	Pentachlorophenol	0.001	2	0	0	100.0%				0	0	100.0%
2987	Tetrachloroethylene	0.005	1037	0	0	100.0%				73	64	93.8%
2984	Trichloroethylene	0.005	1037	0	0	100.0%				73	64	93.8%
2996	Styrene	0.1	1037	0	0	100.0%				73	64	93.8%
2991	Toluene	1	1037	0	0	100.0%				73	64	93.8%
2979	trans-1,2-Dichloroethylene	0.1	1037	0	0	100.0%				73	64	93.8%
2955	Xylenes (total)	10	1037	0	0	100.0%				73	64	93.8%
2020	Toxaphene	0.003	NA	0	0	NA				0	0	NA
2036	Oxamyl (Vydate)	0.2	1	0	0	100.0%				0	0	100.0%
2040	Picloram	0.5	1	0	0	100.0%				0	0	100.0%
2037	Simazine	0.004	2321	0	0	100.0%				208	208	91.0%
2976	Vinyl chloride	0.002	1037	0	0	100.0%				73	64	93.8%

State:	OHIO
Reporting Interval:	JANUARY 1, 1999 - DECEMBER 31, 1999

SDWIS Codes		MCL (mg/R) ¹	Number of Systems Required to Sample during 1999	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance
2950	Total trihalomethanes	0.10	141	0	0	100.0%				1	1	99.3%

State:	OHIO
Reporting Interval:	JANUARY 1, 1999 - DECEMBER 31, 1999

SDWIS Codes		MCL (mg/R) ¹	Number of Systems Required to Sample during 1999	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance
	Inorganic Contaminants											
1074	Antimony	0.006	681	0	0	100.0%				61	61	91.0%
1005	Arsenic	0.05	826	0	0	100.0%				61	61	92.6%
1094	Asbestos	7 million fibers/ft # 10 µm long	78	0	0	100.0%				12	12	84.6%
1010	Barium	2	431	0	0	100.0%				43	43	90.0%
1075	Beryllium	0.004	682	0	0	100.0%				62	62	90.9%
1015	Cadmium	0.005	427	0	0	100.0%				43	43	89.9%
1020	Chromium	0.1	427	0	0	100.0%				43	43	89.9%
1024	Cyanide (as free cyanide)	0.2	74	0	0	100.0%				10	10	86.5%
1025	Fluoride	4.0	825	0	0	100.0%				76	76	90.8%
1035	Mercury	0.002	433	0	0	100.0%				42	42	90.3%
1040	Nitrate	10 (as Nitrogen)	5861	11	9	99.8%				415	407	93.1%

State:	OHIO
Reporting Interval:	JANUARY 1, 1999 - DECEMBER 31, 1999

SDWIS Codes		MCL (mg/L) ¹	Number of Systems Required to Sample during 1999	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance
1041	Nitrite	1 (as Nitrogen)	236	0	0	100.0%				35	35	85.2%
1045	Selenium	0.05	428	0	0	100.0%				44	43	90.0%
1085	Thallium	0.002	681	0	0	100.0%				63	63	90.7%
1038	Total nitrate and nitrite	10 (as Nitrogen)	NA	0	0	NA				0	0	NA

State:	OHIO
Reporting Interval:	JANUARY 1, 1999 - DECEMBER 31, 1999

SDWIS Codes		MCL (mg/l) ¹	Number of Systems Required to Sample during 1999	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance
	Radionuclide MCLs											
4000	Gross alpha	15 pCi/l	459	0	0	100.0%				27	21	95.4%
4010	Radium-226 and radium-228	5 pCi/l	459	4	1	99.8%				0	0	100.0%
4100	Gross beta	4 mrem/yr	141	0	0	100.0%				0	0	100.0%
	All Chemical Groups Subtotal		5913	15	10	99.8%				3210	678	88.5%

State:	OHIO
Reporting Interval:	JANUARY 1, 1999 - DECEMBER 31, 1999

SDWIS Codes		MCL (mg/l) ¹	Number of Systems Required to Sample during 1999	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance
	Total Coliform Rule											
21	Acute MCL violation	Presence	5901	435	374	93.7%						
22	Non-acute MCL violation	Presence	5901	595	503	91.5%						
23,25	Major routine and follow up monitoring		5901							1799	1232	79.1%
28	Sanitary survey ²									0	0	100.0%
	TCR Subtotal		5901	1030	687	88.4%				1799	1232	79.1%

State:	OHIO
Reporting Interval:	JANUARY 1, 1999 - DECEMBER 31, 1999

SDWIS Codes		MCL (mg/l) ¹	Number of Systems Required to Sample during 1999	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance
	Surface Water Treatment Rule											
	Filtered systems											
36	Monitoring		173							3	1	99.4%
41	Treatment techniques		173				166	31	82.1%			
	Unfiltered systems											
31	Monitoring		NA							0	0	NA
42	Failure to filter		NA				0	0	NA			
	SWTR Subtotal						166	31	82.1%	3	1	99.4%

State:	OHIO
Reporting Interval:	JANUARY 1, 1999 - DECEMBER 31, 1999

SDWIS Codes		MCL (mg/R) ¹	Number of Systems Required to Sample during 1999	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance
	Lead and Copper Rule											
51	Initial lead and copper tap M/R		87							41	30	65.5%
52	Follow-up or routine lead and copper tap M/R		1336							100	98	92.7%
58, 62	Treatment Installation		NA				0	0	100.0%			
65	Public education		41				11	11	73.2%			
	Lead & Copper Subtotal		1423				11	11	98.60%	141	127	91.1%

1. Values are in milligrams per liter (mg/R), unless otherwise specified.

2. Number of major monitoring violations for sanitary survey under the Total Coliform Rule.

Definitions for Violations Table

The following definitions apply to the Summary of Violations table.

NA: Not Applicable, no requirements for 1999, compliance rate is not calculated.

Filtered Systems: Water systems that have installed filtration treatment [40 CFR 141, Subpart H].

Inorganic Contaminants: Non-carbon-based compounds such as metals, nitrates, and asbestos. These contaminants are naturally-occurring in some water, but can get into water through farming, chemical manufacturing, and other human activities. EPA has established MCLs for 15 inorganic contaminants [40 CFR 141.62].

Lead and Copper Rule: This rule established national limits on lead and copper in drinking water [40 CFR 141.80-91]. Lead and copper corrosion pose various health risks when ingested at any level, and can enter drinking water from household pipes and plumbing fixtures. States report violations of the Lead and Copper Rule in the following six categories:

Initial lead and copper tap M/R: SDWIS Violation Code 51 indicates that a system did not meet initial lead and copper testing requirements, or failed to report the results of those tests to the State.

Follow-up or routine lead and copper tap M/R: SDWIS Violation Code 52 indicates that a system did not meet follow-up or routine lead and copper tap testing requirements, or failed to report the results.

Treatment installation: SDWIS Violation Codes 58 AND 62 indicate a failure to install optimal corrosion control treatment system (58) or source water treatment system (62) which would reduce lead and copper levels in water at the tap. [One number is to be reported for the sum of violations in these two categories].

Public education: SDWIS Violation Code 65 shows that a system did not provide required public education about reducing or avoiding lead intake from water.

Maximum Contaminant Level (MCL): The highest amount of a contaminant that EPA allows in drinking water. MCLs ensure that drinking water does not pose either a short-term or long-term health risk. MCLs are defined in milligrams per liter (parts per million) unless otherwise specified.

Monitoring: EPA specifies which water testing methods the water systems must use, and sets schedules for the frequency of testing. A water system that does not follow EPA's schedule or methodology is in violation [40 CFR 141].

States must report monitoring violations that are significant as determined by the EPA Administrator and in consultation with the States. For purposes of this report, significant monitoring violations are major violations and they occur when no samples are taken or no results are reported during a compliance period. A major monitoring violation for the surface water treatment rule occurs when at least 90% of the required samples are not taken or results are not reported during the compliance period.

Organic Contaminants: Carbon-based compounds, such as industrial solvents and pesticides. These contaminants generally get into water through runoff from cropland or discharge from factories. EPA has

set legal limits on 54 organic contaminants that are to be reported [40 CFR 141.61].

Radionuclides: Radioactive particles which can occur naturally in water or result from human activity. EPA has set legal limits on four types of radionuclides: radium-226, radium-228, gross alpha, and beta particle/photon radioactivity [40 CFR 141]. Violations for these contaminants are to be reported using the following three categories:

Gross alpha: SDWIS Contaminant Code 4000 for alpha radiation above MCL of 15 picocuries/liter. Gross alpha includes radium-226 but excludes radon and uranium.

Combined radium-226 and radium-228: SDWIS Contaminant Code 4010 for combined radiation from these two isotopes above MCL of 5 pCi/L.

Gross beta: SDWIS Contaminant Code 4101 for beta particle and photon radioactivity from man-made radionuclides above 4 millirem/year.

Reporting Interval: The reporting interval for violations to be included in the first PWS Annual Compliance Report is from January 1, 1999 through December 31, 1999.

SDWIS Code: Specific numeric codes from the Safe Drinking Water Information System (SDWIS) have been assigned to each violation type included in this report. The violations to be reported include exceeding contaminant MCLs, failure to comply with treatment requirements, and failure to meet monitoring and reporting requirements. Four-digit SDWIS Contaminant Codes have also been included in the chart for specific MCL contaminants.

Surface Water Treatment Rule: The Surface Water Treatment Rule establishes criteria under which water systems supplied by surface water sources, or ground water sources under the direct influence of surface water, must filter and disinfect their water [40 CFR 141, Subpart H]. Violations of the "Surface Water Treatment Rule" are to be reported for the following four categories:

Monitoring, routine/repeat (for filtered systems): SDWIS Violation Code 36 indicates a system's failure to carry out required tests, or to report the results of those tests.

Treatment techniques (for filtered systems): SDWIS Violation Code 41 shows a system's failure to properly treat its water.

Monitoring, routine/repeat (for unfiltered systems): SDWIS Violation Code 31 indicates a system's failure to carry out required water tests, or to report the results of those tests.

Failure to filter (for unfiltered systems): SDWIS Violation Code 42 shows a system's failure to properly treat its water. Data for this violation code will be supplied to the States by EPA.

Total Coliform Rule (TCR): The Total Coliform Rule establishes regulations for microbiological contaminants in drinking water. These contaminants can cause short-term health problems. If no samples are collected during the one month compliance period, a significant monitoring violation occurs. States are to report four categories of violations:

Acute MCL violation: SDWIS Violation Code 21 indicates that the system found fecal coliform or E. coli, potentially harmful bacteria, in its water, thereby violating the rule.

Non-acute MCL violation: SDWIS Violation Code 22 indicates that the system found total coliform in samples of its water at a frequency or at a level that violates the rule. For systems collecting fewer than 40 samples per month, more than one positive sample for total coliform is a violation. For systems collecting 40 or more samples per month, more than 5% of the samples positive for total coliform is a violation.

Major routine and follow-up monitoring: SDWIS Violation Codes 23 AND 25 show that a system did not perform any monitoring. [One number is to be reported for the sum of violations in these two categories.]

Sanitary Survey: SDWIS Violation Code 28 indicates a major monitoring violation if a system fails to collect 5 routine monthly samples if sanitary survey is not performed.

Treatment Techniques: A water disinfection process that EPA requires instead of an MCL for contaminants that laboratories cannot adequately measure. Failure to meet other operational and system requirements under the Surface Water Treatment and the Lead and Copper Rules have also been included in this category of violation for purposes of this report.

Unfiltered Systems: Water systems that do not need to filter their water before disinfecting it because the source is very clean [40 CFR, Subpart H].

Violation: A failure to meet any state or federal drinking water regulation.