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EPA

THE NATIONAL PUBLIC WATER SYSTEM SUPERVISION PROGRAM

FY 1993 COMPLIANCE REPORT

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Office of Ground Water and Drinking Water

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The National Drinking Water Program: An Overview

The National Drinking Water Program: An Overview

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, EPA establishes treatment techniques (TTs) in lieu of an MCL to control unacceptable levels of contaminants in water. The Agency also regulates how often water systems 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. In addition, EPA requires PWSs to monitor for unregulated contaminants to provide data on occurrences for future regulatory development. Finally, EPA requires PWSs to notify the public when they have violated any of the regulations.

The SDWA applies to the 50 States, the District of Columbia, Indian lands, Puerto Rico, the Virgin Islands, American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and the Republic of Palau.

The SDWA allows States and Territories to seek 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. Of the 57 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 SDWA Amendments gave Indian Tribes the right to apply for and receive primacy. To receive primacy, a Tribe must meet the same requirements as a State. To date, no Tribes have requested primacy. Currently, EPA administers PWSS Programs on all Indian lands.

Primacy States report quarterly to EPA on their Public Water System (PWS) inventory statistics, the incidence of MCL, M/R, and TT violations, and the enforcement actions taken against violators. The EPA Regional Offices report this information for Wyoming, the District of Columbia, and all Indian lands. Regional offices also report Federal enforcement actions taken. EPA stores this data in an automated database called the Federal Reporting Data System (FRDS). This report is based largely on data retrieved from FRDS.

Sources of Drinking Water Contamination

Sources of Drinking Water Contamination

Contaminants may enter drinking water before, during, or after treatment by a water system. The majority of PWSs treat their water, as necessary, to ensure that their customers receive water which is safe to drink. Some of the sources of drinking water contaminants are as follows:

Before Treatment

- Bacteria from human or animal sources
- Turbidity in water caused by suspended matter such as clay, silt, and microscopic organisms
- Overflowing storm sewers
- Defective storage tanks
- Leaking hazardous landfills, ponds, and pits
- Saltwater intruding on depleted aquifers near seashores
- Pesticides, fertilizers, and other agricultural run-off
- Run-off from oil-slicked or salt-treated highways
- Underground injection of hazardous wastes
- Naturally-occurring fluoride and metals such as arsenic and cadmium
- Decay products of radon, radium, and uranium
- Industrial chemicals, such as solvents

During Treatment

- By-products of disinfectants such as trihalomethanes

After Treatment

- Lead, copper, asbestos, and other materials from corroding pipes
- Bacteria and dirt entering through leaking pipes
- Improper connections with other systems that allow contaminants to enter drinking water pipes
- Permeation of contaminants through certain pipe materials

Drinking Water Standards and Public Water System Inventory

Drinking Water Standards

During FY 1993, regulations for 81 individual contaminants were in effect [72 have MCLS and 9 are regulated by treatment techniques (TTs)].[1] The list of 81 is comprised of 6 microbiological contaminants, 4 radionuclides, 17 inorganic chemicals, and 54 organic chemicals. A list of these contaminants appears on page 9.

In January 1993, M/R requirements began under the Phase II Rule for all system sizes and under the Phase V Rule for systems serving more than 150 service connections. The Phase II Rule established the Standardized Monitoring Framework, which synchronized the monitoring schedules of Phase II and Phase V contaminants and the continued monitoring of the eight volatile organic chemicals (VOCs) regulated under the Phase I Rule.

The Phase II Rule established MCLs for 28 new contaminants, revised MCLs for 10 previously regulated contaminants, and deleted the MCL for 1 contaminant (i.e., silver). These MCLs were effective July 1992. The Phase V Rule set MCLs for 23 new contaminants and revised the MCL for 1 contaminant. Although M/R requirements for systems with more than 150 service connections began in January 1993, the MCLs under the Phase V Rule will not become effective until January 1994. The Phase V M/R requirements for the smaller PWSs will begin in January 1996.

During FY 1993, two treatment technique (TT) rules were fully implemented: the Lead and Copper Rule (LCR) and the Surface Water Treatment Rule (SWTR). The LCR, which became effective on December 7, 1992, established TTs for minimizing lead and copper in drinking water in lieu of an MCL. Under this rule, PWSs serving > 50,000 people were required to monitor beginning January 1992. PWSs serving between 3,301 and 50,000 people were required to begin monitoring in July 1992, and systems serving $\leq$ 3,300 people were required to begin monitoring in July 1993.

When the LCR became effective on December 7, 1992, the old MCL of 50 parts per billion (ppb) for lead was replaced with an action level of 15 ppb. In addition, a copper action level of 1.3 parts per million (ppm) became effective. An exceedance of the lead or copper action level is not a violation but is a trigger that requires a system to conduct additional monitoring and may require it to perform one or more TTs. These TTs include public education (for a lead exceedance only), corrosion control treatment, source water treatment, and lead service line replacement.

[1]This total does not include aldicarb, aldicarb sulfone, and aldicarb sulfoxide which are regulated under the Phase II Rule. At the time of the writing of this report, a court order was in place that stayed the regulation of these three contaminants.

Drinking Water Standards (cont.)

June 29, 1993 was an important date for implementation and enforcement of the SWTR for three reasons. First, it was the deadline by which those unfiltered surface water systems which were required to filter had to have filtration in place. Secondly, it was the date by which filtered systems had to meet performance criteria for filtration and disinfection specified in the rule. Lastly, the turbidity MCL ceased to apply to filtered systems. Filtered systems must now comply with the turbidity standards in the SWTR.

FY 1994 will be critical for the implementation of SWTR. By June 29, 1994, States must determine which CWSs served by ground water sources are under the direct influence of surface water. Those ground water systems determined to be under the direct influence will be subject to the requirements of the SWTR.

The M/R requirements which are established in regulations generally set requirements based on the PWS's source (i.e., surface or ground water), the number of people it serves, and its type. There are three types of PWSs. These are defined on page 10 of this report.

Contaminants for which Regulations Were in Effect during FY 1993

Individually Regulated Contaminants

Arsenic
Copper*
Fluoride
Lead*
Total Coliforms
Total Trihalomethanes (TTHM)

Phase I Contaminants (VOC Rule)

Benzene
Carbon Tetrachloride
1,2-Dichloroethane
1,1-Dichloroethylene
p-Dichlorobenzene
1,1,1-Trichloroethane
Trichloroethylene
Vinyl Chloride

Surface Water Treatment

*Giardia lamblia**
*Legionella**
Heterotrophic Plate Count*
Turbidity*
Viruses*

Phase II Contaminants

Acrylamide*
Alachlor (Lasso)
Asbestos
Atrazine
Barium
Carbofuran
Cadmium
Chlordane
Chromium
Dibromochloropropane (DBCP)
o-Dichlorobenzene
cis-1,2-Dichloroethylene
trans-1,2-Dichloroethylene
1,2-Dichloropropane
2,4-D
2,4,5-TP (Silvex)
Ethylbenzene
Ethylene Dibromide (EDB)
Epichlorohydrin*
Heptachlor
Heptachlor Epoxide
Lindane (BHC-gamma)
Mercury
Methoxychlor
Monochlorobenzene
Nitrate
Nitrite
PCBs
Pentachlorophenol
Selenium
Styrene
Tetrachloroethylene
Toluene
Toxaphene
Xylenes (total)

Phase V Contaminants

Antimony
Beryllium
Cyanide
Dalapon
Di(2-ethylhexyl)adipate
Di(2-ethylhexyl)phthalate
Dichloromethane
Dinoseb
Dioxin (2,3,7,8-TCDD)
Diquat
Endothall
Endrin
Glyphosate
Hexachlorobenzene (HCB)
Hexachlorocyclopentadiene
Nickel
Oxamyl (Vydate)
PAHs (Benzo(a)pyrene)
Picloram
Simazine
Thallium
1,2,4-Trichlorobenzene
1,1,2-Trichloroethane

Radionuclides

Beta Particle and Photon Radioactivity
Gross Alpha Particle Activity
Radium-226
Radium-228

*Denotes contaminants which are regulated by TTs instead of an MCL.

Public Water System Inventory

Definitions

A **Public Water System (PWS)** 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. PWSs can be community, nontransient noncommunity, or transient noncommunity systems. Each type of PWSs is defined as follows.

A **Community Water System (CWS)** is a PWS that provides water to the same population year-round.

A **Nontransient Noncommunity Water System (NTNCWS)**[1] is a PWS that regularly serves at least 25 of the same people at least six months of the year. Examples of these systems include schools, factories, and hospitals that have their own water supplies.

A **Transient Noncommunity Water System (TNCWS)**[1] caters to transitory customers in non-residential areas such as campgrounds, motels, and gas stations.

All PWSs are required to monitor, report and comply with the MCLs for total coliform bacteria and nitrate. In addition, CWSs are required to M/R for other microbiological contaminants, chemicals and radiological contaminants (refer back to page 9 for list), and to adhere to MCL and TT requirements. Because NTNCWSs can contribute significantly to an individual's daily water intake, M/R and MCL requirements under new regulations [beginning with the Phase I (VOCs) Rule promulgated on July 8, 1987] and TT requirements apply to NTNCWSs as well as CWSs.

The following pages contain information on the number of PWSs, the source of their water (i.e., surface or ground), and the population served. This information is provided for all three types of PWSs.

[1]FRDS separates NTNCWSs from TNCWSs. This report also uses the same designations.

Public Water System Inventory (cont.)

Distribution of Public Water Systems by Source

In FY 1993, 191,267 water systems in the 50 States, on Indian lands, and in U.S. Territories were classified as PWSs. The table below shows the distribution of CWSs, NTNCWSs, and TNCWSs by source.

Approximately 93 percent (177,589) of all PWSs obtain their water from a ground water source. More specifically, about 81 percent (46,880) of CWSs, 97 percent (23,221) of NTNCWSs, and 98 percent (107,488) of TNCWSs were served by ground water sources in FY 1993. The remaining systems were served by surface sources such as lakes and rivers.

CWSs, which provide drinking water primarily to residential areas, account for 30 percent of all PWSs. NTNCWSs, such as schools and factories, make up approximately 13 percent of the PWSs. The remaining 57 percent of PWSs are TNCWSs.

Public Water System Inventory

	CWSs		NTNCWSs		TNCWSs		All PWSs[1]
Source*	Number of Systems (%)	Population Served (%)	Number of Systems (%)	Population Served (%)	Number of Systems (%)	Population Served (%)	Number of Systems (%)
Surface	10,681 (19%)	148,684,000 (61%)	771 (3%)	625,000 (10%)	2,226 (2%)	1,157,000 (7%)	13,678 (7%)
Ground	46,880 (81%)	93,995,000 (39%)	23,221 (97%)	5,690,000 (90%)	107,488 (98%)	14,271,000 (93%)	177,589 (93%)
Total	57,561 (100%)	242,679,000 (100%)	23,992 (100%)	6,315,000 (100%)	109,714 (100%)	15,428,000 (100%)	191,267 (100%)

FRDS 07 (3/10/94).

* Note: Includes systems that obtain their water from other PWSs.

[1] Since an individual can be served by more than one category of PWS, the total population served by all PWSs is not cumulative and therefore cannot be determined.

Public Water System Inventory (cont.)

Distribution of Public Water Systems by Source (cont.)

CWSs serve approximately 243 million people. The remainder of the population receives its residential drinking water from private wells and other non-Federally regulated systems (i.e., those serving fewer than 15 service connections or 25 people). Virtually everyone in the 57 States and Territories and on Indian Lands, however, drinks water from one or more types of PWSs at some time during the year because, as previously explained, PWSs include schools, factories, restaurants, motels, churches, campgrounds, highway rest stops, and the like.

Definition of Public Water Systems Size Categories

EPA frequently analyzes PWS compliance trends based on five size categories. (Refer to the table on the right.) These five size categories will be used throughout the remainder of this report.

PWS Size Categories

System Size	Population Served
Very Small	25-500
Small	501-3,300
Medium	3,301-10,000
Large	10,001-100,000
Very Large	More than 100,000

Public Water System Inventory (cont.)

Distribution of Community Water Systems by Size

EPA's oversight activities in FY 1993 were focused primarily on the 57,561 CWSs which served approximately 242,679,000 people. The following table presents the FY 1993 universe of CWSs.

Community Water Systems: Primary Source and Population Served

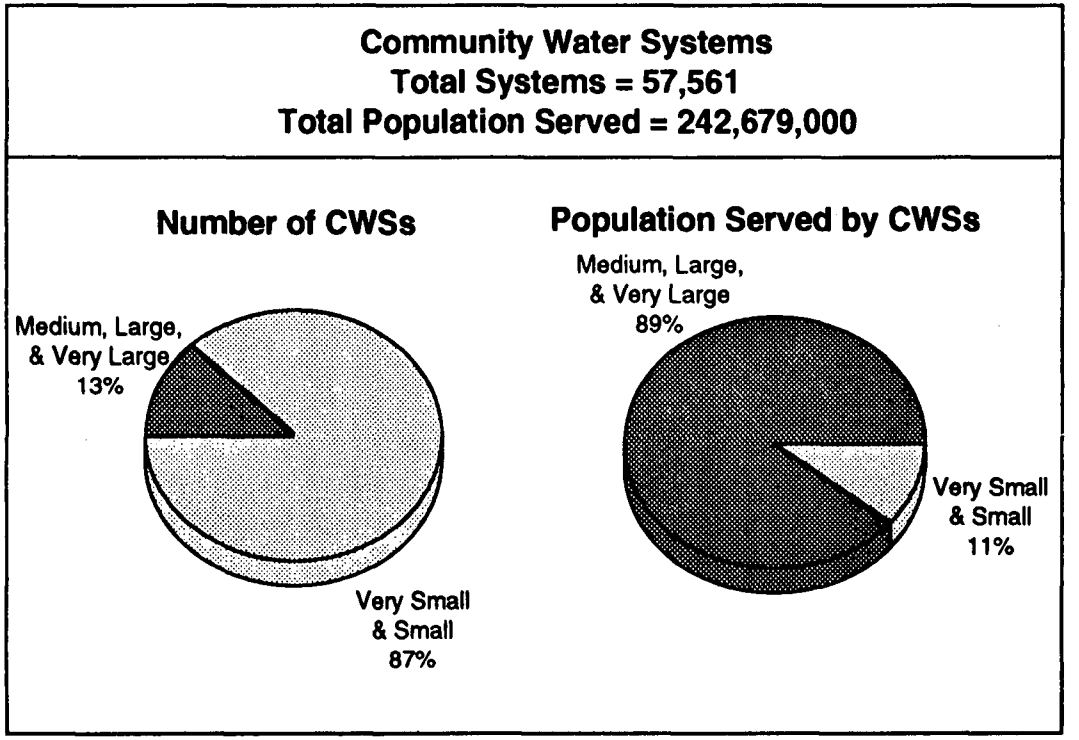
	Source*				Population Served By*			
System Size	Surface Water	Ground Water	Total Number of CWSs	Percent of CWSs	Surface Water	Ground Water	Population Served by CWSs	Percent of Population Served by CWSs
Very Small	3,334	32,264	35,598	62%	705,000	4,829,000	5,534,000	2%
Small	3,728	10,723	14,451	25%	5,883,000	14,406,000	20,289,000	9%
Medium	1,744	2,378	4,122	7%	10,483,000	13,807,000	24,290,000	10%
Large	1,646	1,427	3,073	5%	47,990,000	37,741,000	85,731,000	35%
Very Large	229	88	317	1%	83,623,000	23,212,000	106,835,000	44%
Total	**10,681**	**46,880**	**57,561**	**100%**	**148,684,000**	**93,995,000**	**242,679,000**	**100%**

FRDS 07 (3/10/94).
*Note: Includes systems that obtain their water from other PWSs.

Public Water System Inventory (cont.)

Distribution of Community Water Systems by Size (cont.)

Eighty-seven (87) percent of CWSs are classified as very small or small, that is, they regularly serve 3,300 or fewer people. Although there are more than 50,000 very small and small systems, as shown in the table on page 13, these CWSs serve fewer than 26 million of the approximately 243 million customers of CWSs in the country. Conversely, the 317 very large systems, which comprise only 1 percent of the CWS universe, serve 44 percent of the customers supplied by CWSs.



FRDS 07 (3/10/94).

Public Water System Inventory (cont.)

Distribution of Nontransient Noncommunity Water Systems by Size

In FY 1993, EPA and States continued to implement stricter requirements for the regulation of the 23,992 NTNCWSs. These systems serve approximately 6,315,000 people. The following table shows the FY 1993 universe of NTNCWSs.

Nontransient Noncommunity Water Systems: Primary Source and Population Served

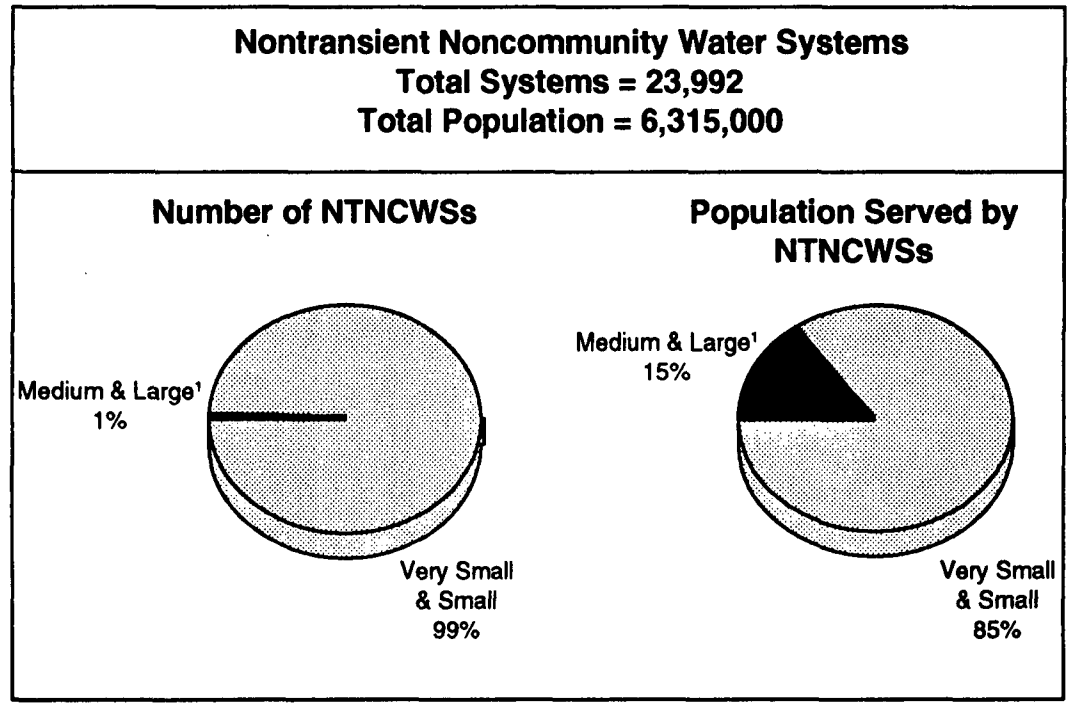
	Source*				Population Served By*			
System Size	Surface Water	Ground Water	Total Number of NTNCWSs	Percent of NTNCWSs	Surface Water	Ground Water	Population Served by NTNCWSs	Percent of Population Served by NTNCWSs
Very Small	570	20,578	21,148	88%	89,000	2,589,000	2,678,000	42%
Small	179	2,570	2,749	11%	218,000	2,467,000	2,685,000	43%
Medium	15	59	74	< 1%	83,000	314,000	397,000	6%
Large	7	14	21	< 1%	235,000	320,000	555,000	9%
Very Large	0	0	0	0%	0	0	0	0%
Total	**771**	**23,221**	**23,992**	**100%**	**625,000**	**5,690,000**	**6,315,000**	**100%**

FRDS 07 (3/10/94).
*Note: Includes systems that obtain their water from other PWSs.

Public Water System Inventory (cont.)

Distribution of Nontransient Noncommunity Water Systems by Size (cont.)

Like CWSs, most NTNCWSs regularly serve 3,300 or fewer people. Ninety-nine (99) percent of NTNCWSs are classified as very small or small. However, unlike smaller CWSs which provide water to only 11% of the population served by CWSs, very small and small NTNCWSs serve the majority (85 percent) of the population served by NTNCWSs.



FRDS 07 (3/10/94).
¹None of the NTNCWSs are very large systems (i.e., none serve more than 100,000 people).

Public Water System Inventory (cont.)

Distribution of Transient Noncommunity Water Systems by Size

In FY 1993, EPA and States continued to oversee the 109,714 TNCWSs. TNCWSs serve approximately 15,428,000 people. The following table shows the FY 1993 universe of TNCWSs.

Transient Noncommunity Water Systems: Primary Source and Population Served

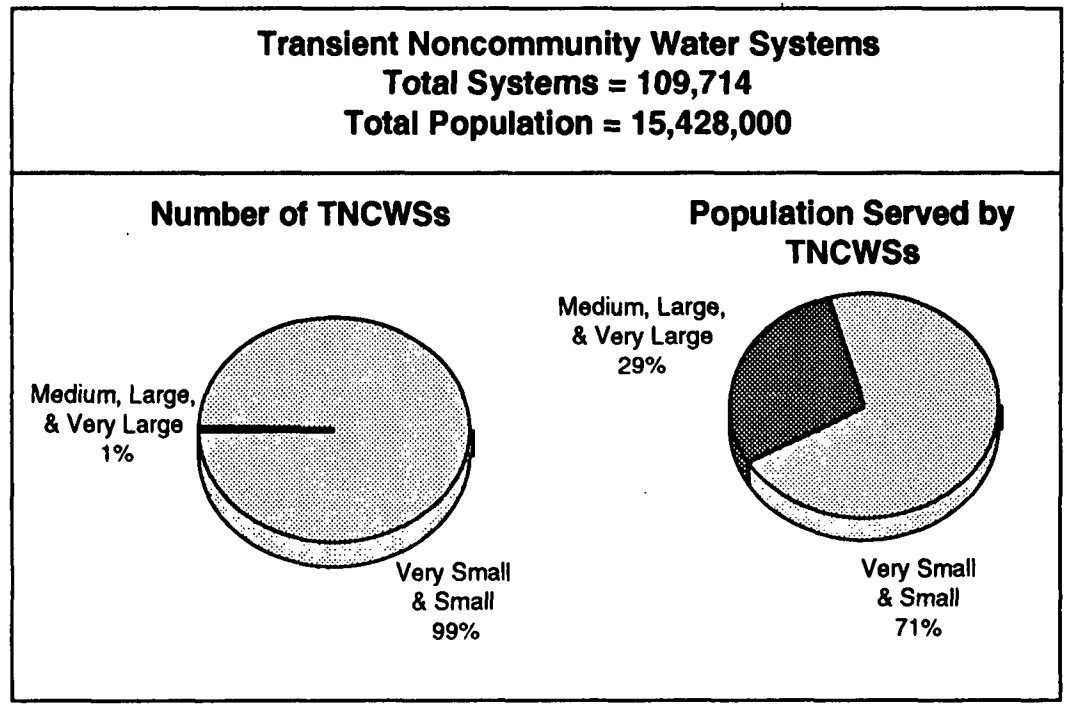
	Source*				Population Served By*			
System Size	Surface Water	Ground Water	Total Number of TNCWSs	Percent of TNCWSs	Surface Water	Ground Water	Population Served by TNCWSs	Percent of Population Served by TNCWSs
Very Small	2,024	104,898	106,922	97%	203,000	8,060,000	8,263,000	54%
Small	162	2,356	2,518	2%	194,000	2,447,000	2,641,000	17%
Medium	26	177	203	< 1%	153,000	991,000	1,144,000	7%
Large	12	53	65	< 1%	297,000	1,697,000	1,994,000	13%
Very Large	2	4	6	< 1%	310,000	1,076,000	1,386,000	9%
Total	**2,226**	**107,488**	**109,714**	**100%**	**1,157,000**	**14,271,000**	**15,428,000**	**100%**

FRDS 07 (3/10/94).
*Note: Includes systems that obtain their water from other PWSs.

Public Water System Inventory (cont.)

Distribution of Transient Noncommunity Water Systems by Size (cont.)

Like CWSs and NTNCWSs, most TNCWSs regularly serve 3,300 or fewer people. As shown below, 99 percent of TNCWSs are classified as very small or small, and provide drinking water to the majority (71 percent) of the population served by TNCWSs.



FRDS 07 (3/10/94).

Compliance with Federal Regulations

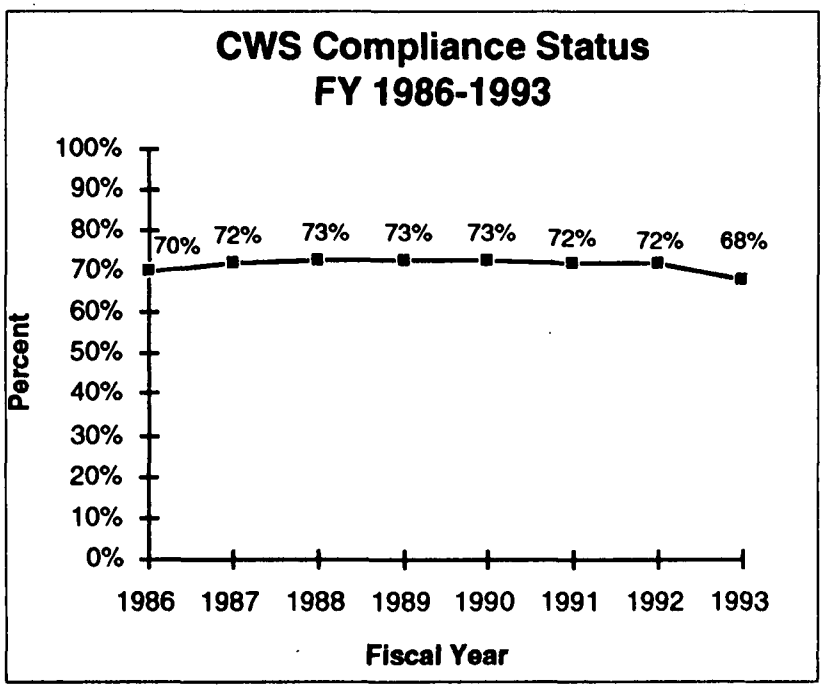
Compliance With Federal Regulations - National Compliance Trends

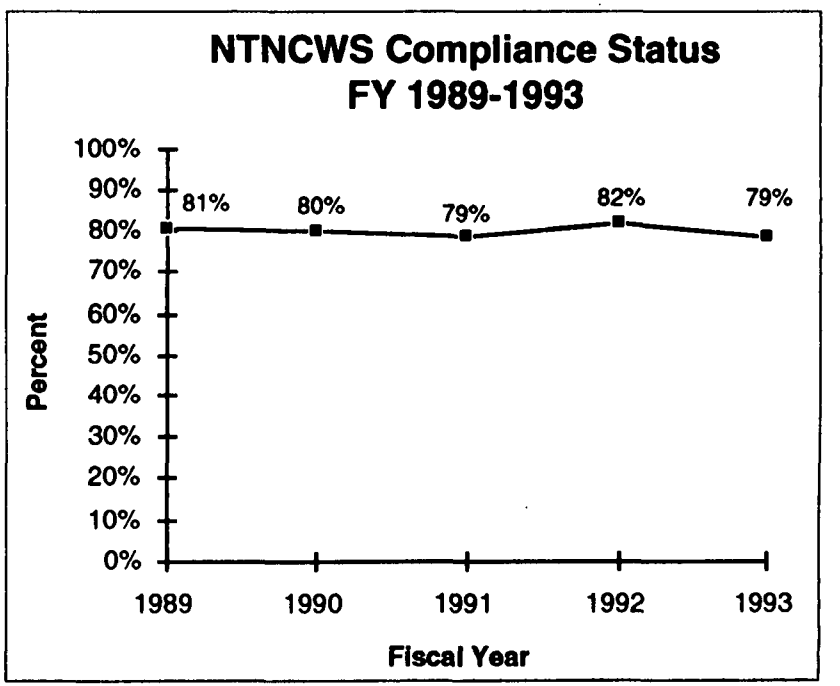
CWS Compliance Status

The compliance rate for CWSs has remained between 68% and 73% from FY 1986 to FY 1993. This means that for example, in FY 1993, no violations were reported to EPA's data system (FRDS) for 68% of the CWSs.

NTNCWS Compliance Status

The NTNCWS compliance rate has remained between 79% and 82% from FY 1989 to FY 1993. This rate was slightly higher than the compliance rate for CWSs; partly because in the past, NTNCWSs were subject to M/R and MCL requirements for fewer contaminants. However, with the promulgation of each new or revised rule, NTNCWSs are subject to the same requirements as CWSs of similar size.





FRDS 07 (3/10/94).

Compliance With Federal Regulations (cont.)

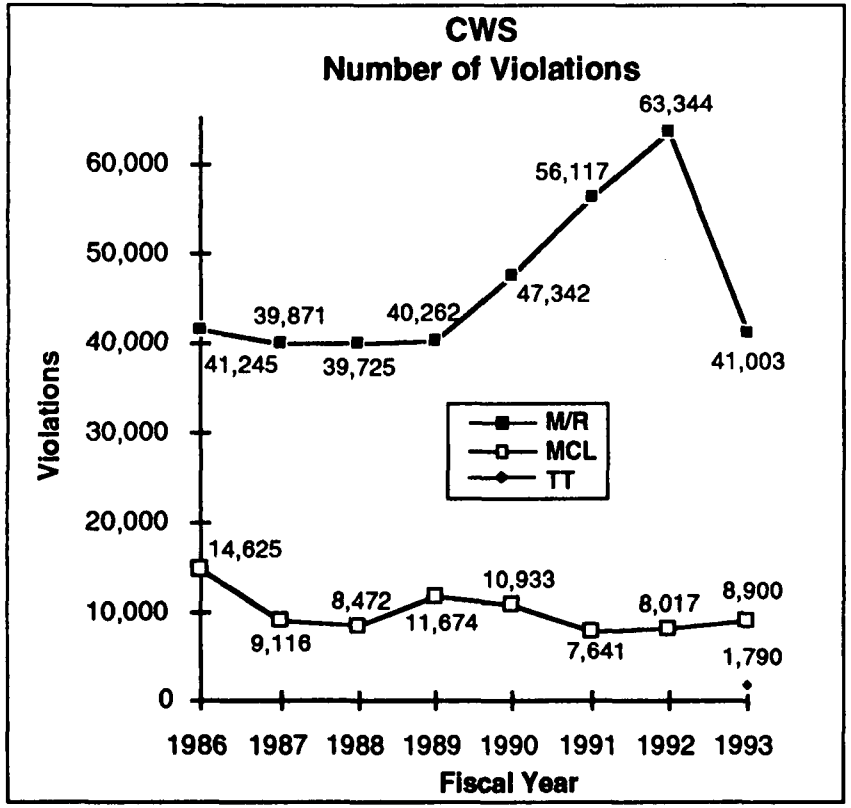
National Compliance Trends (cont.)

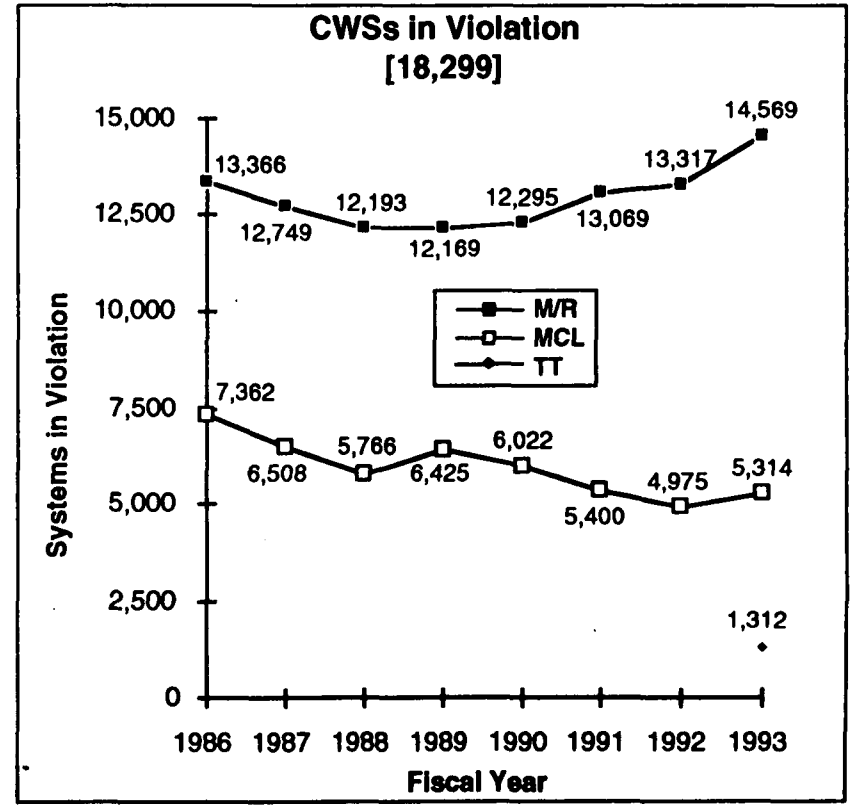
The charts on page 22 highlight the number of MCL and M/R violations reported to FRDS for CWSs over the last eight fiscal years. Both the total number of violations and the number of systems in violation declined somewhat from FY 1986 to FY 1988 while the inventory of CWSs increased steadily. Between FY 1988 and FY 1992, both the number of violations and the number of systems in violation rose due to the implementation of new regulations and more complete reporting.

In FY 1993, there was an increase in the overall number of systems in violation, a dramatic decrease in the number of M/R violations, a slight increase in the number of MCL violations, and, for the first time, systems could violate TT requirements. The number of CWSs with M/R violations has increased from FY 1992, but the number of M/R violations per system has decreased. The graphs on the next page also indicate that the number of systems in violation for failure to monitor is more than double the number of systems with MCL violations.

In FY 1993, approximately 9 percent of CWSs violated MCL standards while 25 percent of CWSs violated the M/R requirements, and 2 percent violated TT requirements.

Community Water Systems
Compliance Trends
FY 1986-1993





FRDS 07 (3/10/94).

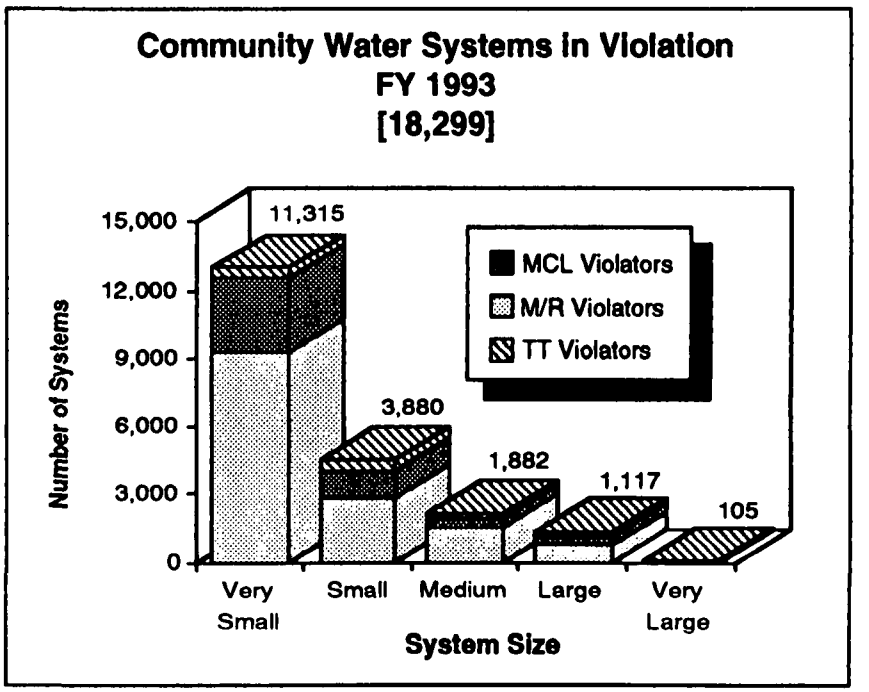
Note: The total number of systems in violation for FY 1993 equals 18,299. The number of CWSs with M/R violations (14,569), plus the number of CWSs with MCL violations (5,314), plus the number of CWSs with TT violations (1,312) in FY 1993 exceeds 18,299 (21,195) because some systems had a combination of MCL, M/R, and/or TT violations.

Compliance With Federal Regulations (cont.)

FY 1993 National Compliance Profile - Community Water Systems

This chart shows the system size distribution of all CWSs that violated the MCL, M/R and/or TT requirements during FY 1993. Eighty-three (83) percent of the CWSs in violation in FY 1993 were very small or small systems. In FY 1992, 89 percent of the CWSs in violation were very small or small systems. However, during both FY 1992 and FY 1993, very small and small systems made up 87 percent of the CWS universe.

High rates of noncompliance are particular problems for systems in Alaska and Puerto Rico. These systems are typically very small and small systems and face additional constraints that include cultural and language barriers, transportation difficulties, and more limited remedies than in other States. Eighty-two (82) percent of the CWSs in Alaska and 89 percent in Puerto Rico violated drinking water standards during FY 1993. Of these systems with FY 1993 violations, 97 percent in Alaska and 76 percent in Puerto Rico were very small or small systems.



FRDS 07 (3/10/94).

Note: The number over each bar is the number of CWSs that had an MCL, M/R, and/or TT violation. However, the height of the bar shows the actual number of CWSs with each of the three violation types and includes double and triple counting. For example, the number of very large CWSs with MCL violations (29), M/R violations (68), and TT violations (21) equals 118, and exceeds the total number of very large CWSs in violation (105), because some very large CWSs had a combination of MCL, M/R, and/or TT violations.

Compliance With Federal Regulations (cont.)

FY 1993 National Compliance Profile - CWSs (cont.)

The charts on the following page present the number of CWSs in violation of the MCL and/or M/R requirements for each of the five major contaminant groups, the Lead and Copper Rule (LCR), and the Surface Water Treatment Rule (SWTR). These charts demonstrate that the most common violations among CWSs tend to be of microbiological regulations. In FY 1993, 67 percent of the CWSs in violation failed to meet the microbiological requirements. More specifically, 52 percent of the CWSs in violation failed to meet the microbiological M/R requirements.

In the charts, the categories for systems with LCR and SWTR violations are further subdivided into M/R and TT violators only. Under these rules, TTs instead of an MCL are used to minimize contamination in drinking water.

The TT violations listed for the LCR correspond to a system's failure to conduct public education, make a recommendation for optimal corrosion control treatment (OCCT), or make a source water treatment (SOWT) recommendation.

Public education is required by those systems that exceeded the lead action level of 15 ppb, and is used to notify a system's service population that the system exceeded the lead action level, the potential health effects of lead, and the steps the system is required to follow and those the consumers can take to minimize their exposure to lead in drinking water.

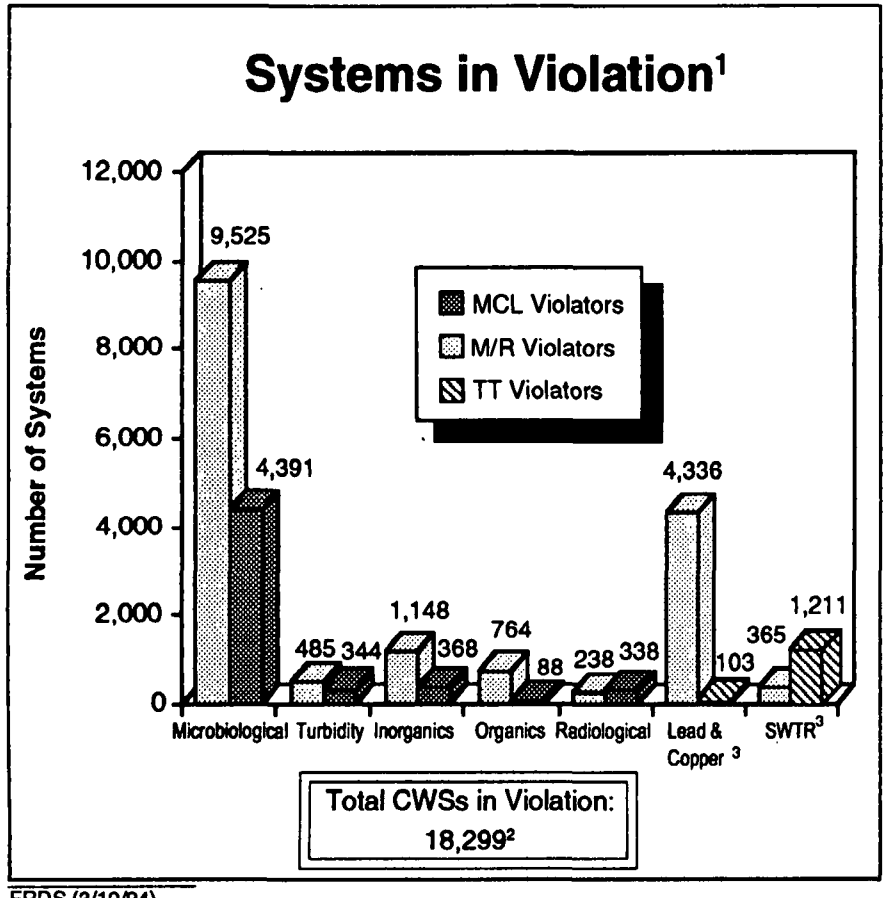
All large systems, except those that have successfully demonstrated that optimal corrosion control exists, must conduct corrosion control studies, beginning January 1, 1993, and at the completion of the study, make a recommendation on the OCCT to be installed. Medium and small systems that exceed the lead or copper action levels, and have not successfully demonstrated that optimal corrosion control already exists, must make a recommendation regarding the treatment to be installed, within six months after the action level was exceeded.

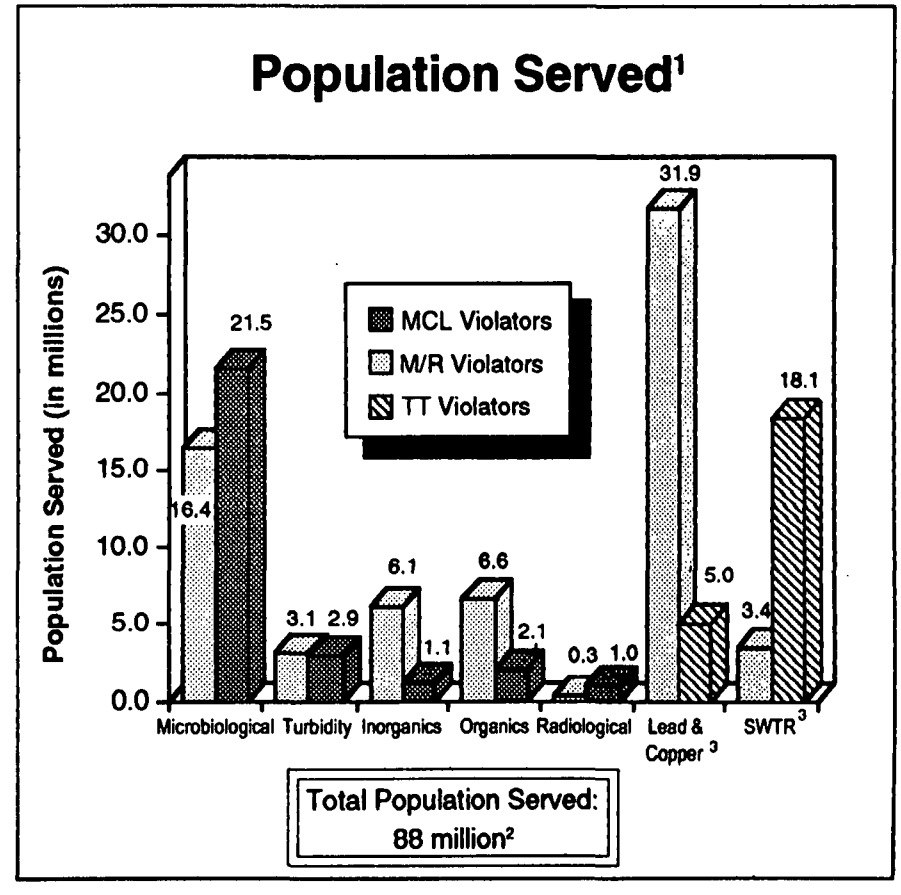
Any system that exceeds the lead or copper action level must complete source water monitoring and make a treatment recommendation to the State within six months after exceeding the action level.

The SWTR TT violations were incurred for surface water systems that failed to install filtration within 18 months of being notified by the primacy agency of the need to install filtration, typically by June 29, 1993; or for those filtered systems that failed to meet the SWTR turbidity or disinfection requirements.

Community Water Systems in Violation by Contaminant Group

FY 1993





FRDS (3/10/94).

[1]Categories total more than actual systems and population served because some systems have combinations of MCL, M/R, and/or TT violations.

[2]These totals reflect the true value (i.e., NO double counting) for CWSs in violation and population affected.

[3]Numbers reflect monitoring requirements under the new Lead and Copper Rule and the new Surface Water Treatment Rule. Under these rules, TTs instead of an MCL are used to minimize contamination in drinking water. LCR violators include systems that failed to provide public education or to make an OCCT or SOWT recommendation. SWTR violators include filtered systems that had TT violations and unfiltered systems that failed to install filtration by the June 29, 1993 deadline.

Compliance With Federal Regulations (cont.)

FY 1993 National Compliance Profile - CWSs (cont.)

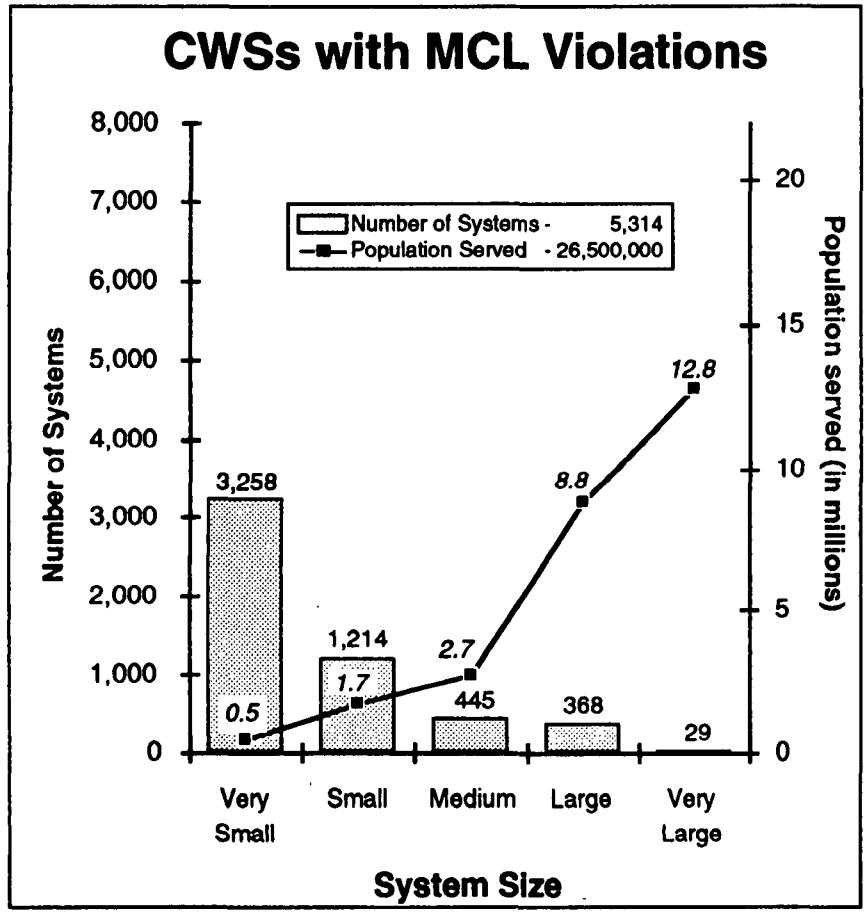
In FY 1993, CWSs in violation of MCL standards served 26.5 million people, or about 11 percent of the total population receiving drinking water from CWSs. Approximately 57 million people, or 23 percent of the population served by CWSs, were served by CWSs with M/R violations. As evidenced by the charts on the following page, while the majority of systems in violation are very small and small CWSs, the largest proportion of the population affected (79%) is served by large and very large CWSs.

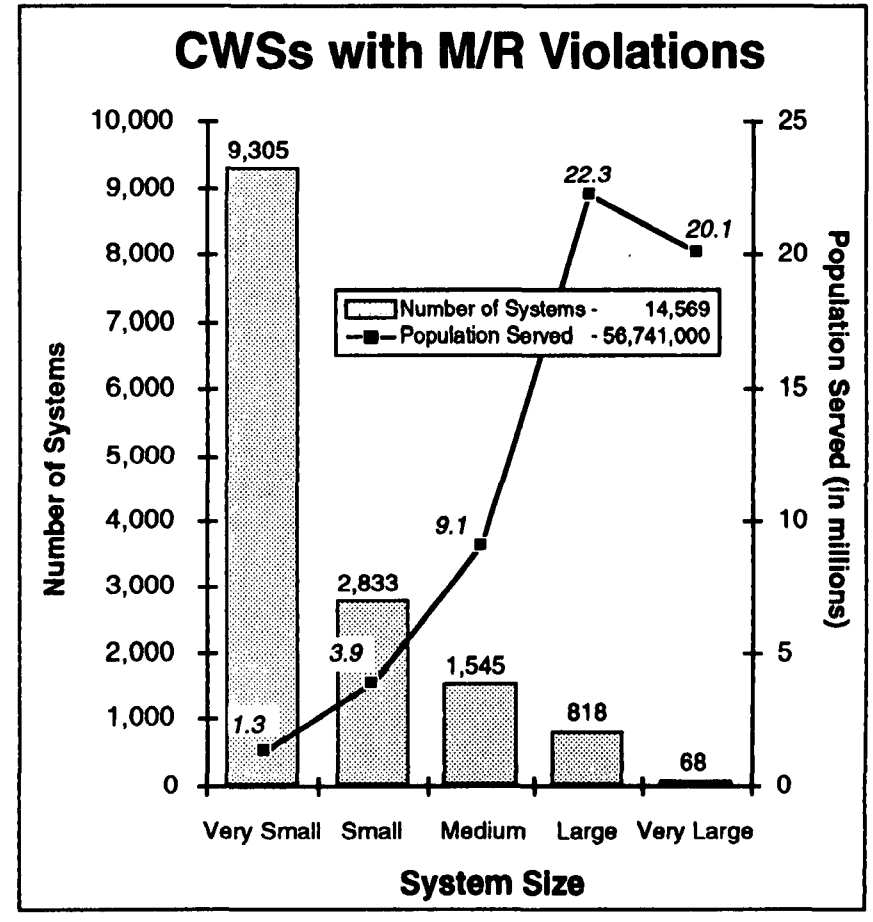
The set of charts located on page 28 display by size category the percent of CWSs in violation of the MCL standards and M/R requirements, and percent of population served by these CWSs.

The set of charts located on page 29 display by size category the percent of CWSs in violation of the TT requirements, and the percent of population they serve. For LCR, these include systems that had violations for failure to conduct public education, or to provide an OCCT or SOWT recommendation. For SWTR, these include filtered systems that had treatment technique violations, or unfiltered systems that failed to have filtration installed by the June 29, 1993 deadline.

Population Served/Number of CWSs in Violation by System Size

FY 1993

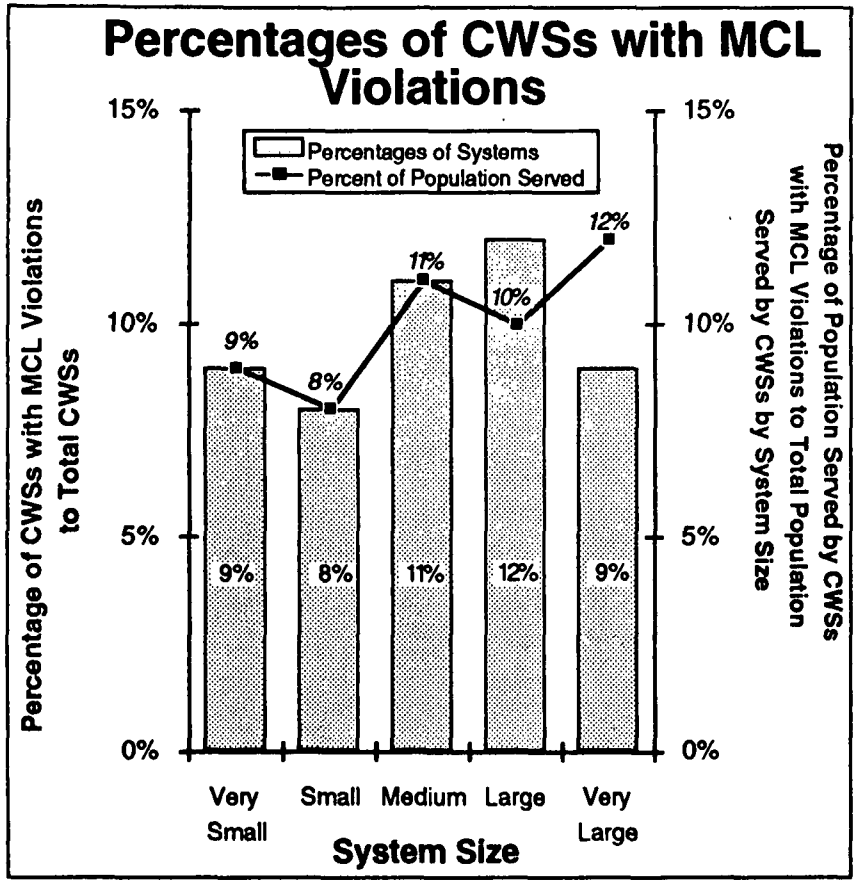


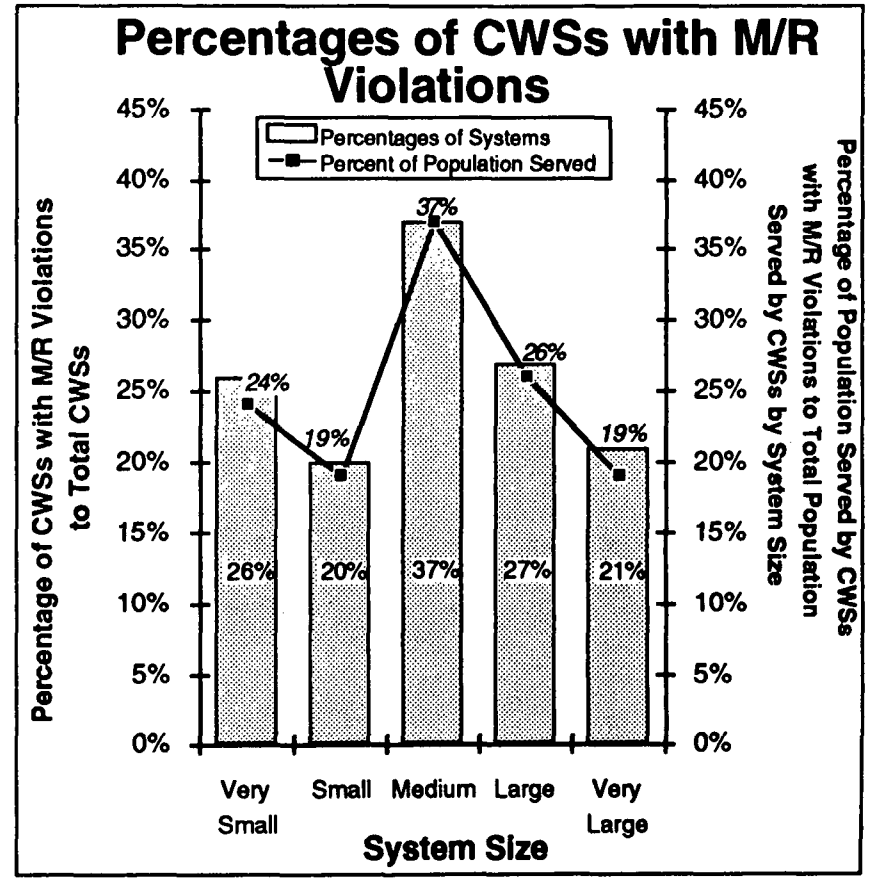


FRDS 07 (3/10/94).

Percentages by System Size of CWSs in Violation and Population Served by CWSs in Violation

FY 1993

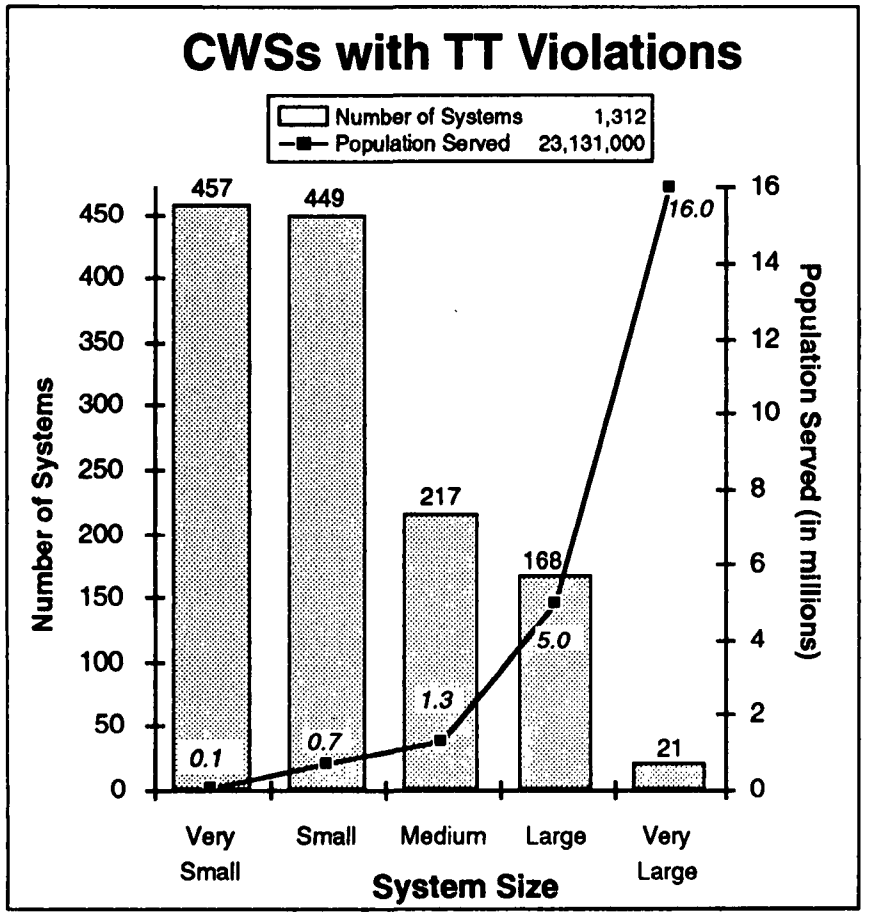


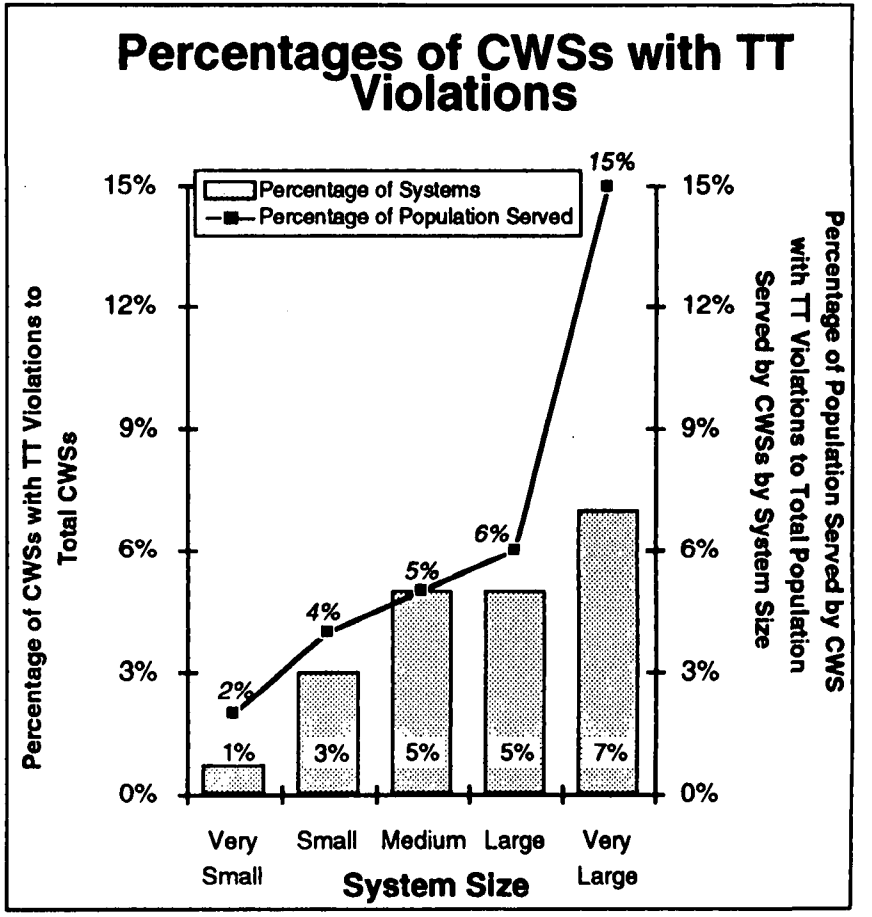


Note: The percentages contained in the columns of the bar chart reflect the percent of very small, small, medium, large and very large systems that had MCL violations (left chart) or M/R violations (right chart). The percentages in the trend lines reflect the percent of population served by these very small, small, medium, large and very large systems that had MCL violations or M/R violations. For example, in FY 1993, 9% of the very large CWSs had MCL violations, and 12% of the total population, which receive water from very large CWSs, were served by these very large systems with MCL violations.

CWSs with Treatment Technique (TT) Violations by System Size

FY 1993





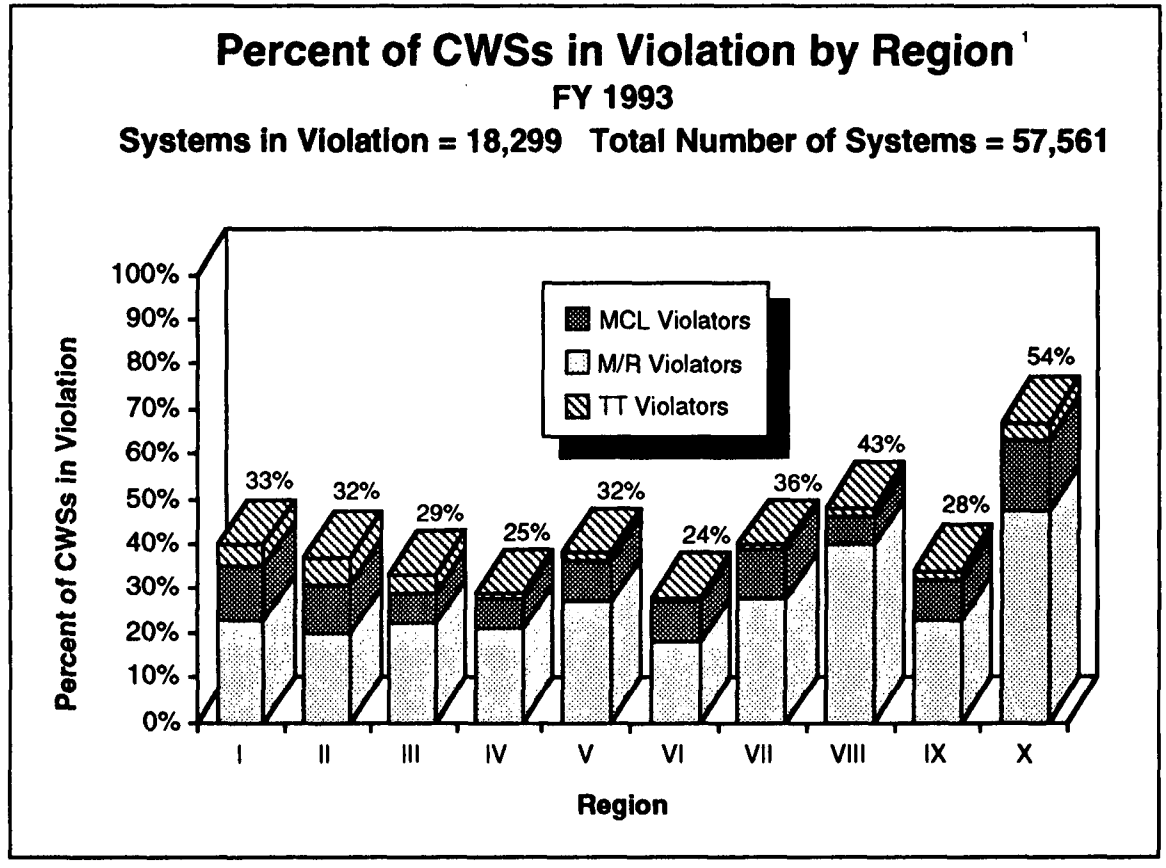
FRDS 07 (3/10/94).

Note: TT violations include for LCR: failure to conduct public education, or failure to provide an OCCT or SOWT recommendation; for SWTR: failure to meet turbidity and/or disinfection requirements, or failure to filter by the June 29, 1993 deadline.

Compliance With Federal Regulations (cont.)

FY 1993 Regional Compliance Profile - CWSs (cont.)

The following chart shows the percent of CWSs in each Region that were in violation during FY 1993. As discussed earlier, this chart shows that CWSs are more often in violation of M/R requirements than MCL standards or TT requirements.

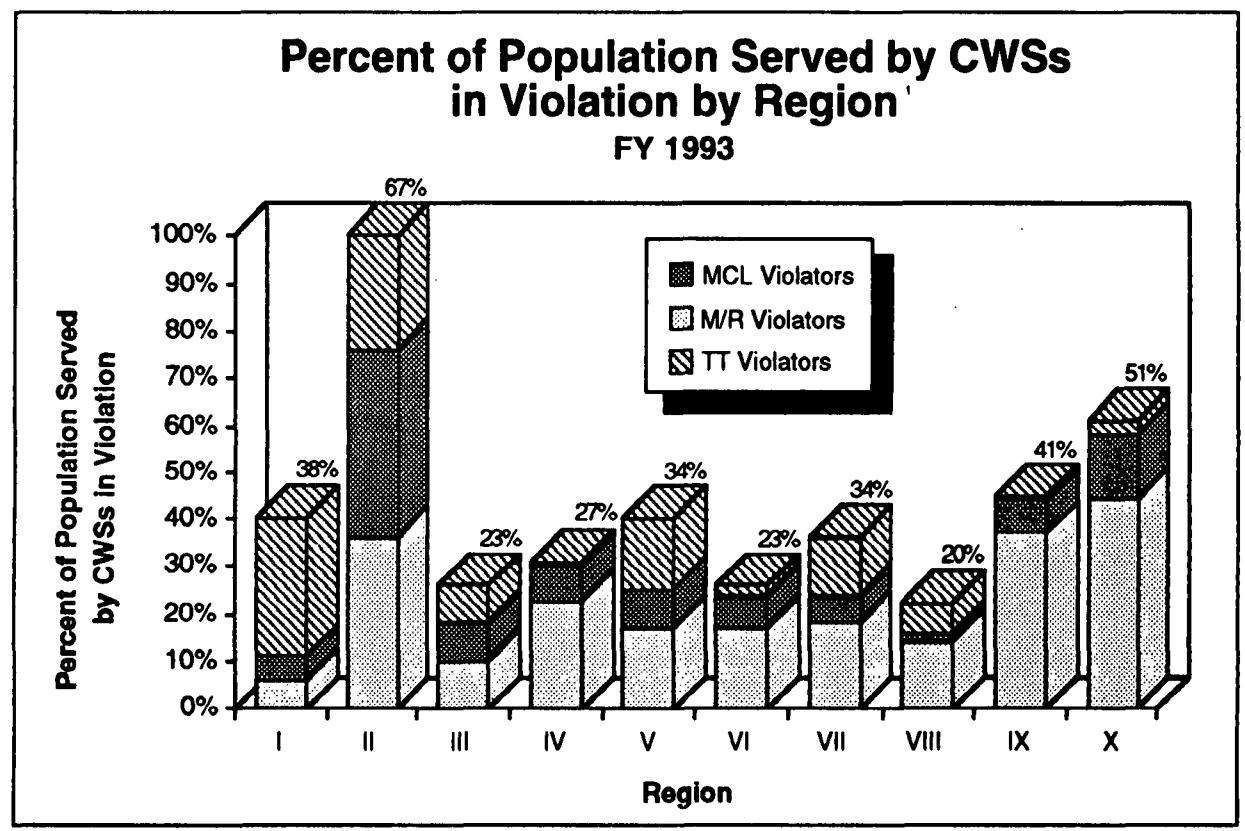


FRDS 07 (3/10/94).
[1]Categories total more than actual percentages of systems with violations because some systems have a combination of MCL, M/R, and/or TT violations. For example, 54% of the CWSs in Region X had FY 1993 violations; however, the individual percentages of CWSs with MCL, M/R, and TT violations were 16%, 47%, and 4% respectively.

Compliance With Federal Regulations (cont.)

FY 1993 Regional Compliance Profile - CWSs (cont.)

The following chart shows the regional profile of the percent of population served by CWSs that were in violation during FY 1993.



FRDS 07 (3/10/94).
[1]Categories total more than actual percentages of systems with violations because some systems have a combination of MCL, M/R, and/or TT violations. For example, in Region II, 67% of the population was served by CWSs with FY 1993 violations; however, the individual percentages of population served by CWSs with MCL, M/R, and TT violations were 40%, 36%, and 29% respectively.

Compliance With Federal Regulations (cont.)

FY 1993 National Compliance Profile - Nontransient Noncommunity Water Systems

In FY 1993, 5,100 NTNCWSs violated MCL standards, M/R requirements, and/or TT requirements. As shown on page 33, approximately 5 percent of all NTNCWSs violated the MCL standards and 18 percent violated the M/R requirements.

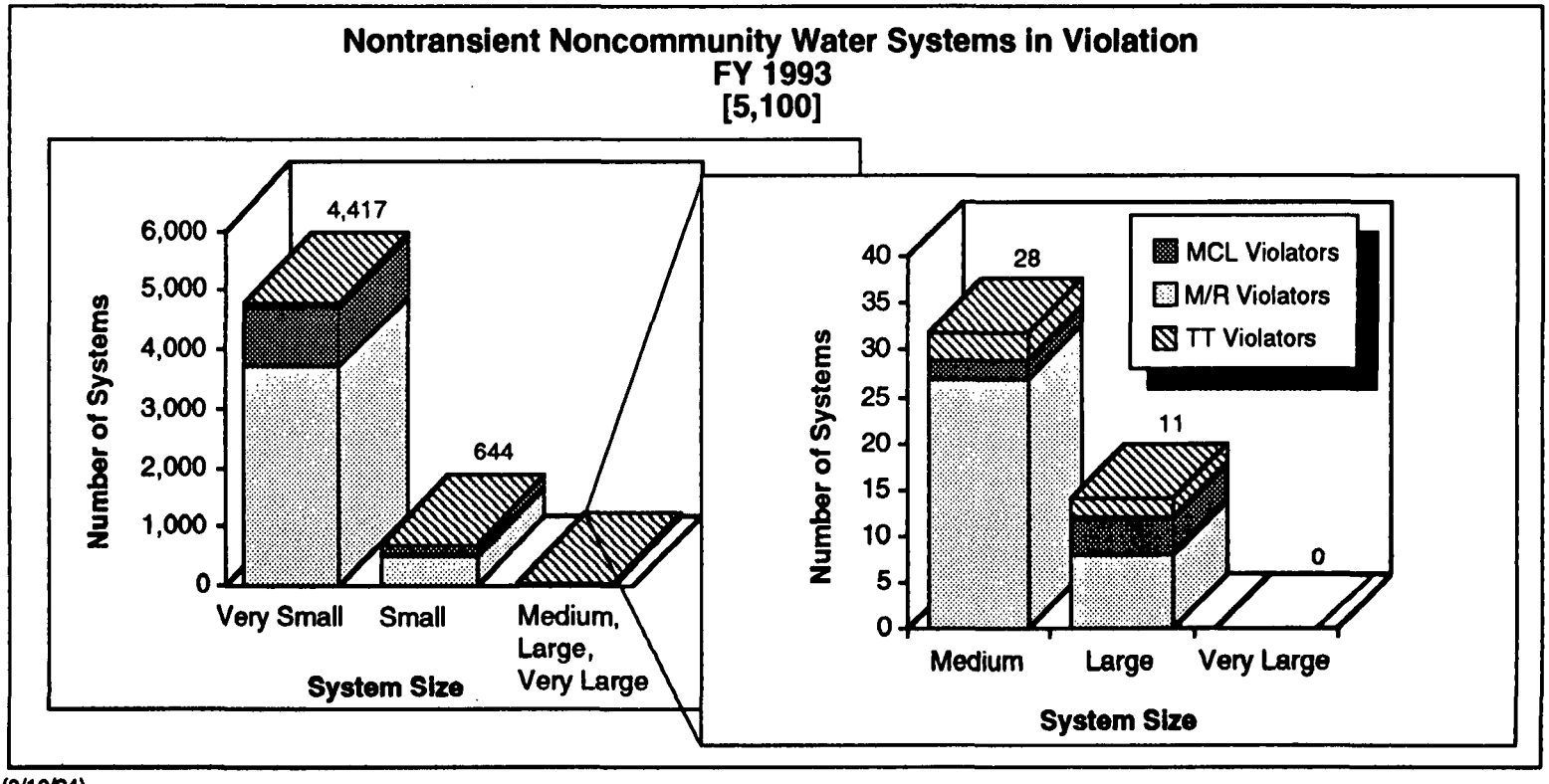
The charts on page 34 present the number of NTNCWSs in violation of the MCL, M/R and/or TT requirements for each of the five major contaminant groups, plus LCR and SWTR. As with the CWSs, the most common violations for NTNCWSs are for microbiological regulations. In FY 1993, 77 percent of the NTNCWSs in violation failed to meet the microbiological requirements. More specifically, 62 percent of the NTNCWSs in violation failed to meet the microbiological M/R requirements.

Some NTNCWSs were in violation of the TT requirements for LCR and SWTR. LCR TT violators include those systems that failed to provide public education or to make an OCCT or SOWT recommendation. SWTR TT violators include those filtered systems that did not meet turbidity or disinfection requirements, and unfiltered systems that failed to install filtration by the June 29, 1993 deadline.

Compliance With Federal Regulations (cont.)

FY 1993 National Compliance Profile - NTNCWSs (cont.)

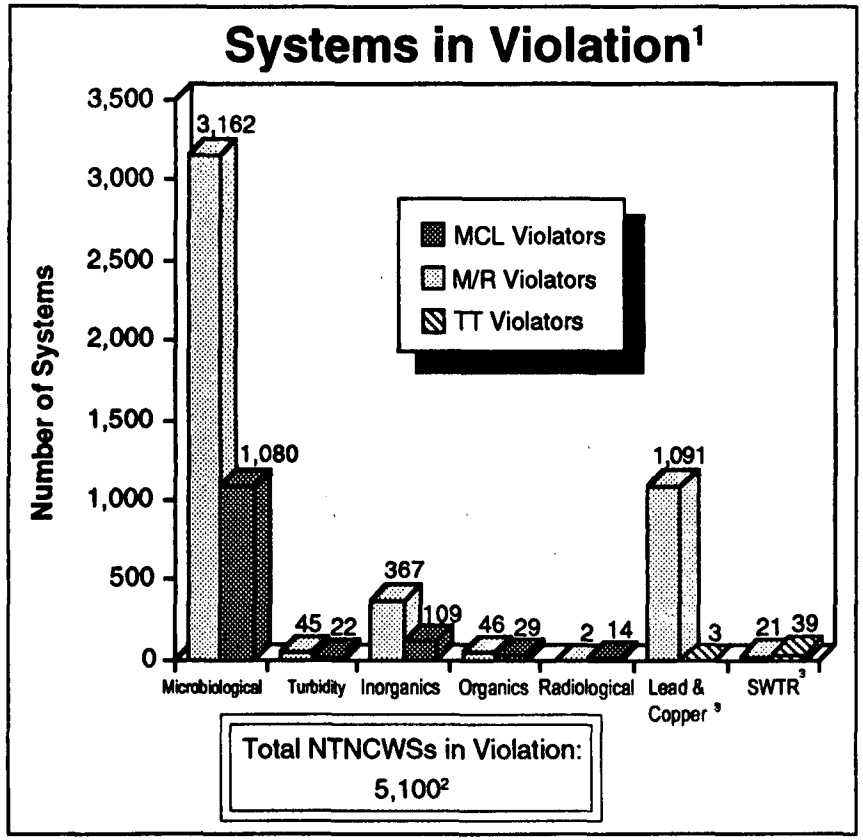
The following chart displays the system size distribution of NTNCWSs that violated the MCL, M/R, and/or TT requirements during FY 1993. As with CWSs, the vast majority of NTNCWSs in violation (99%) are very small or small; however, very small or small NTNCWSs comprise over 99 percent of the NTNCWS universe.

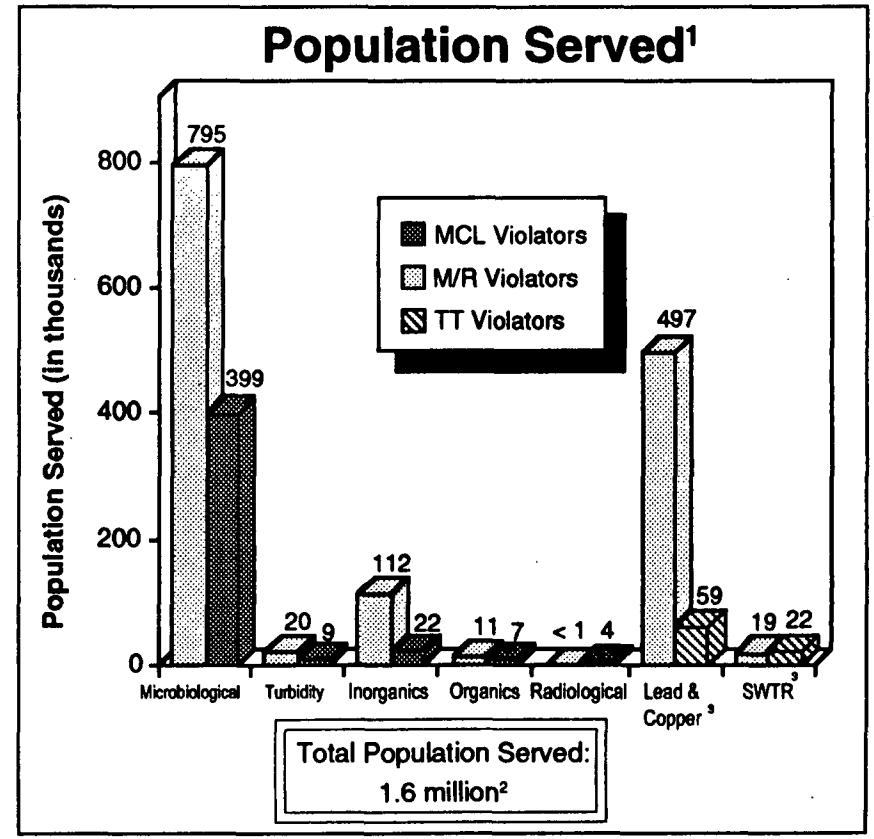


FRDS 07 (3/10/94).
Note: The number over each bar is the number of NTNCWSs that had an MCL, M/R, and/or TT violation. However, the height of the bar shows the actual number of NTNCWSs with each of the three violation types and includes double and triple counting. For example, the number of large NTNCWSs with MCL violations (4), plus the number with M/R violations (8), plus the number with TT violations (2) equals 14, and exceeds the number of large NTNCWSs in violation (11), because some systems had a combination of MCL, M/R, and/or TT violations.

Nontransient Noncommunity Water Systems in Violation by Contaminant Group

FY 1993





FRDS 07 (3/10/94).

[1]Categories total more than actual systems and population served because some systems are both MCL and M/R violators.

[2]These totals reflect the true value (i.e., NO double counting) for NTNCWSs in violation and population affected.

[3]Numbers reflect monitoring requirements under the new Lead and Copper Rule and the new Surface Water Treatment Rule. Under these rules, TTs instead of an MCL are used to *minimize contamination in drinking water.*

Compliance With Federal Regulations (cont.)

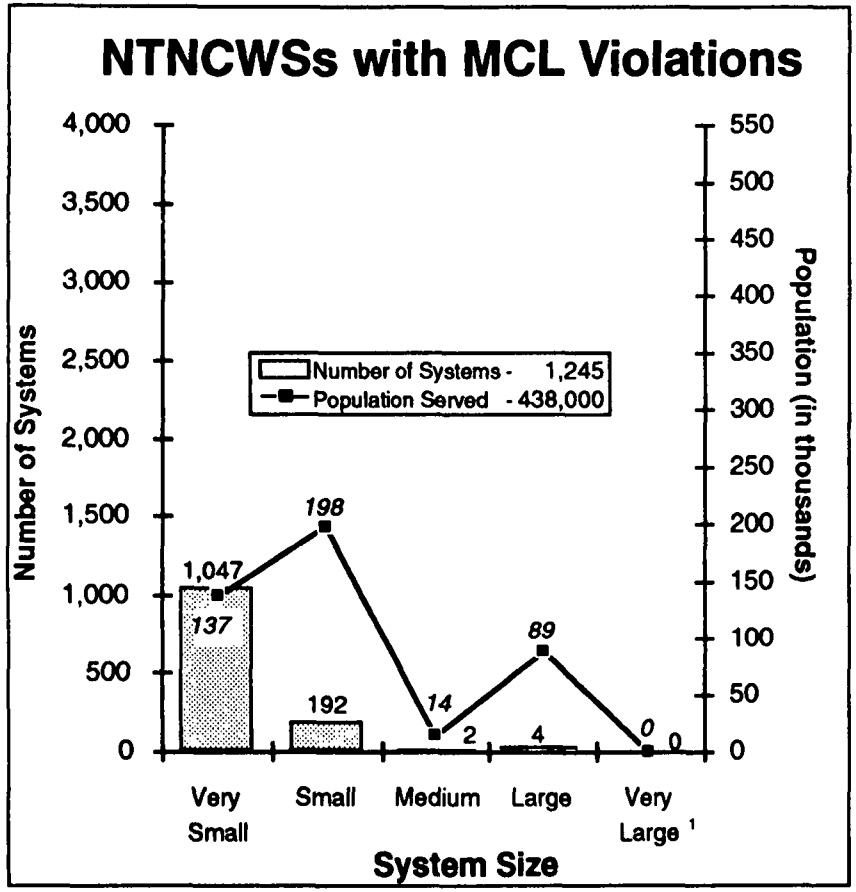
FY 1993 National Compliance Profile - NTNCWSs (cont.)

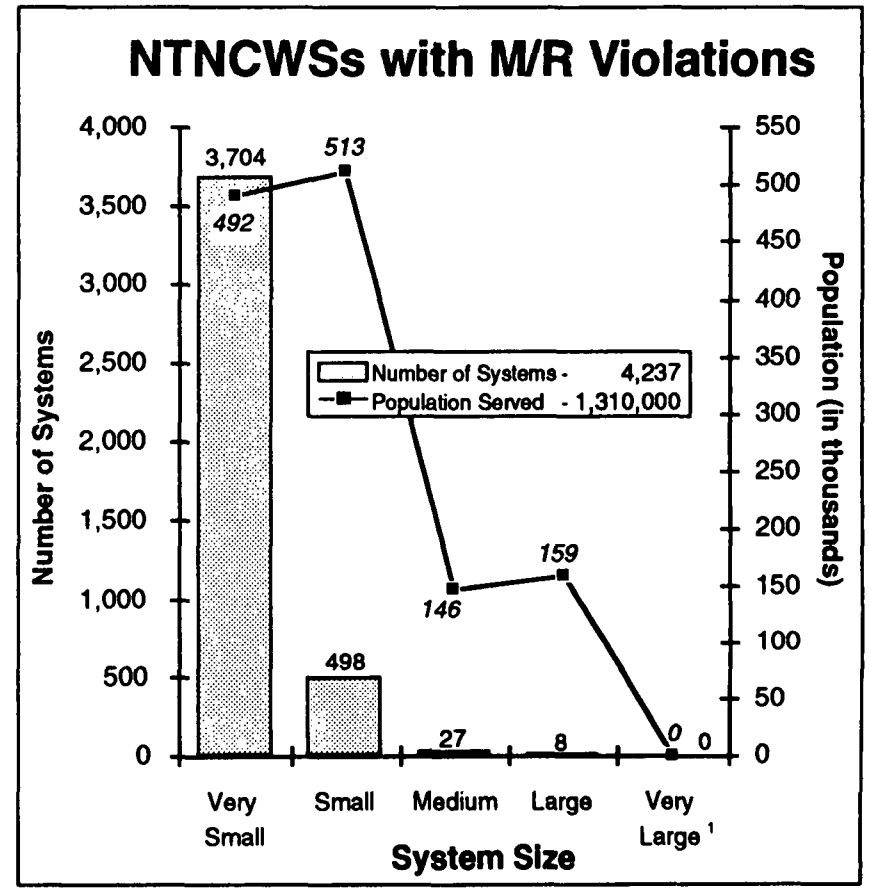
In FY 1993, NTNCWSs in violation of MCL standards served 438,000 people, or about 7 percent of the total population receiving drinking water from NTNCWSs. Approximately 1.3 million people, or 21 percent of the population served by NTNCWSs, were served by NTNCWSs with M/R violations. As illustrated on the following page, the majority of NTNCWSs in violation are very small and small NTNCWSs, but unlike CWSs, the largest proportion of the population affected is served by these very small and small NTNCWSs. Large NTNCWSs account for less than 1 percent of the NTNCWSs in violation. There are no systems in the NTNCWS inventory that serve more than 100,000 people (i.e., are very large systems).

The charts on page 37 display by size category the percent of NTNCWSs in violation, and percent of population served by these NTNCWSs in violation.

Population Served/Number of NTNCWSs in Violation by System Size

FY 1993



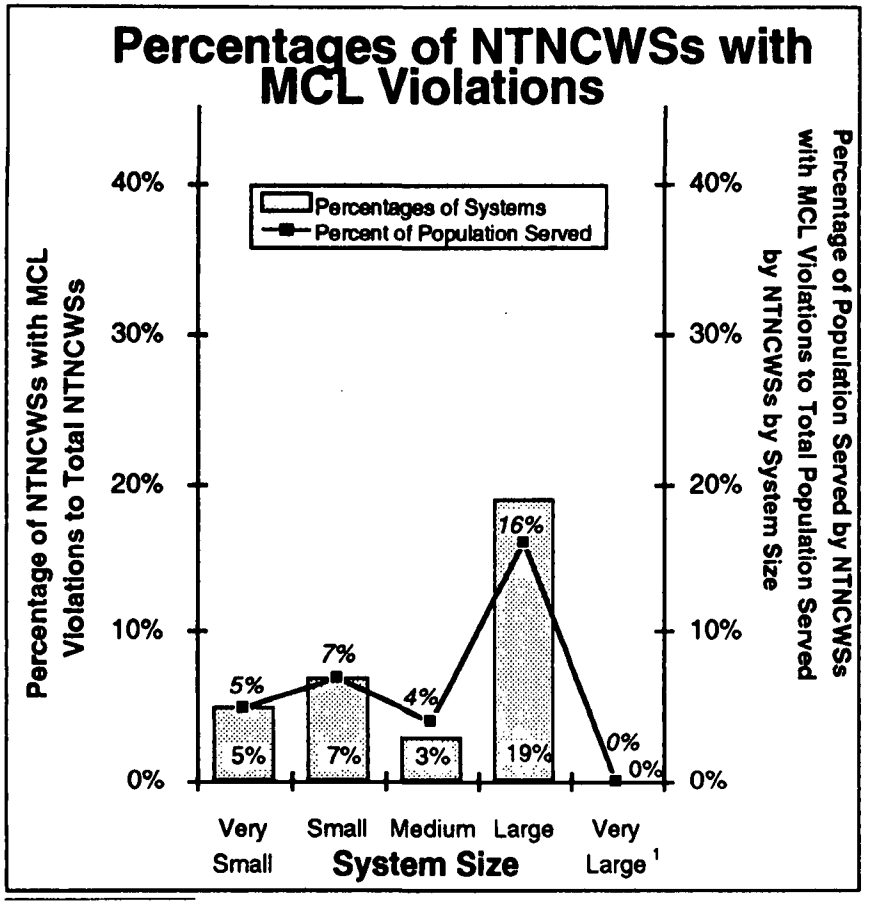


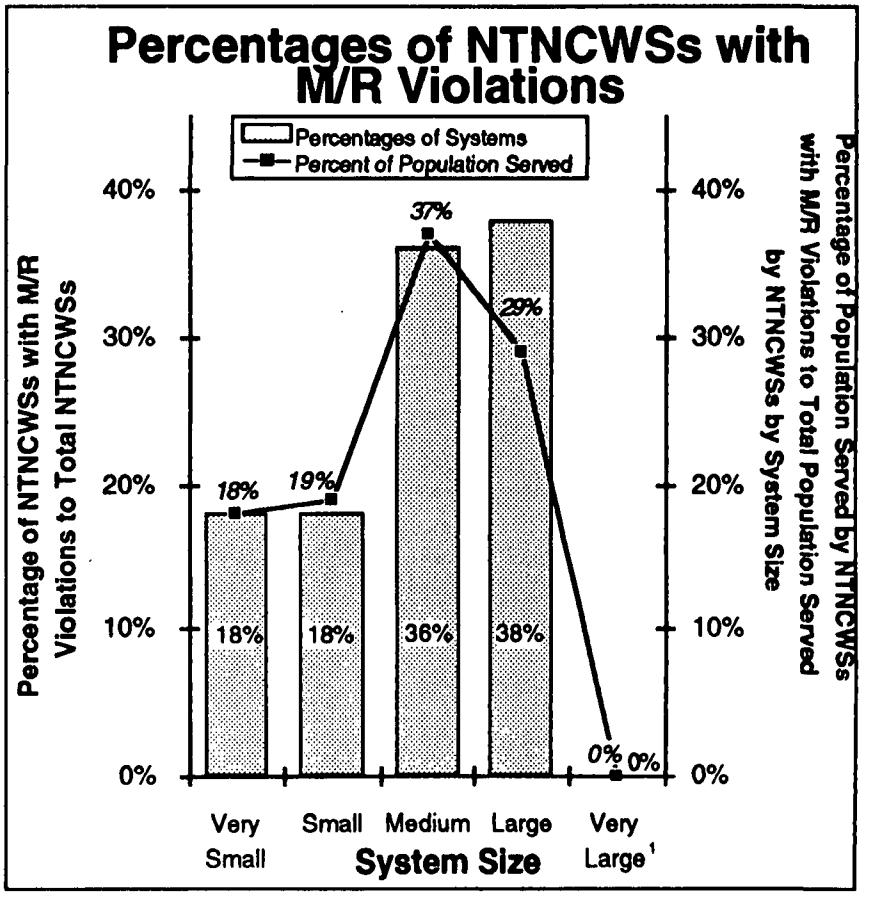
FRDS 07 (3/10/94).

[1] None of the systems in the NTNCWS inventory were very large systems (i.e., served more than 100,000 people).

Percentages by System Size of NTNCWSs in Violation and Population Served by NTNCWSs in Violation

FY 1993





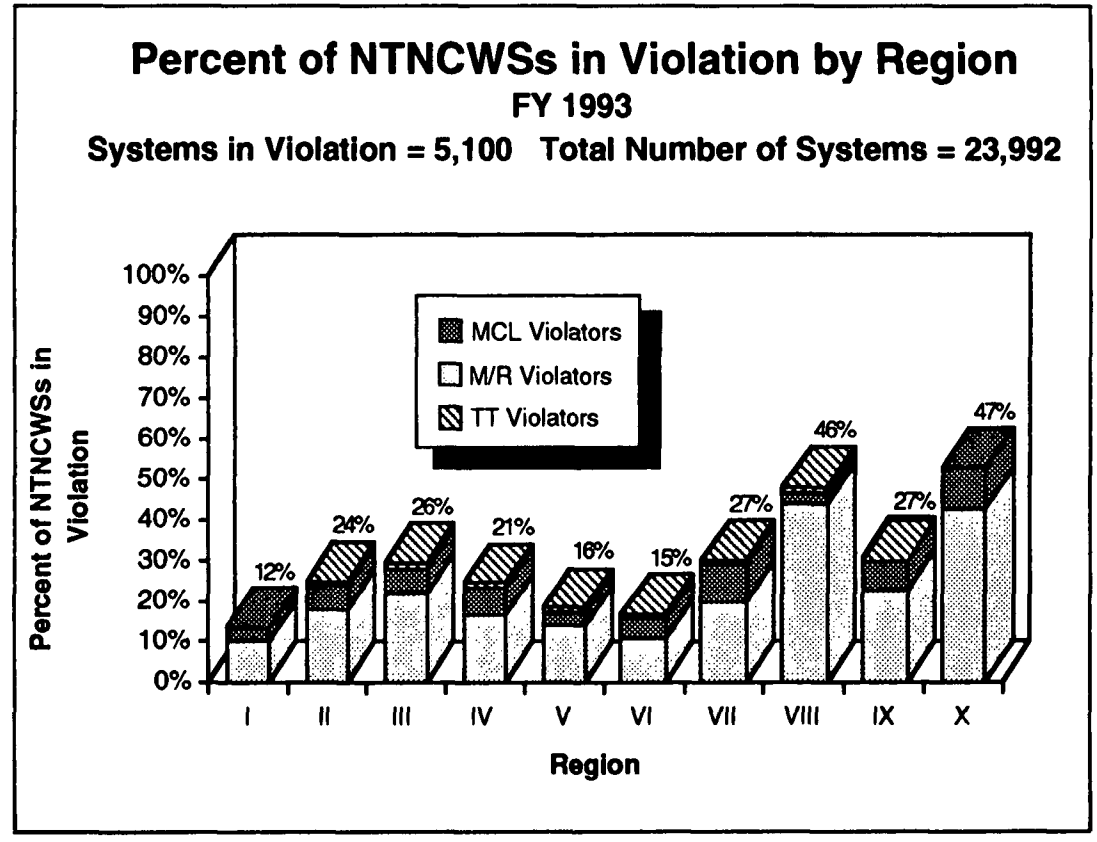
Note: The percentages contained in the columns of the bar chart reflect the percent of very small, small, medium, and large NTNCWSs that had MCL violations and M/R violations, respectively. The percentages in the trend lines reflect the percent of population served by these very small, small, medium, and large NTNCWSs that had MCL violations and M/R violations, respectively. For example, in FY 1993, 18% of the small NTNCWSs had M/R violations, while 19% of the total population served by small NTNCWSs received drinking water from these small system M/R violators.

[1] None of the systems in the NTNCWS inventory were very large systems (i.e., served more than 100,000 people).

Compliance With Federal Regulations (cont.)

FY 1993 Regional Compliance Profile - NTNCWSs (cont.)

The following chart shows the percent of NTNCWSs in each Region that were in violation during FY 1993.



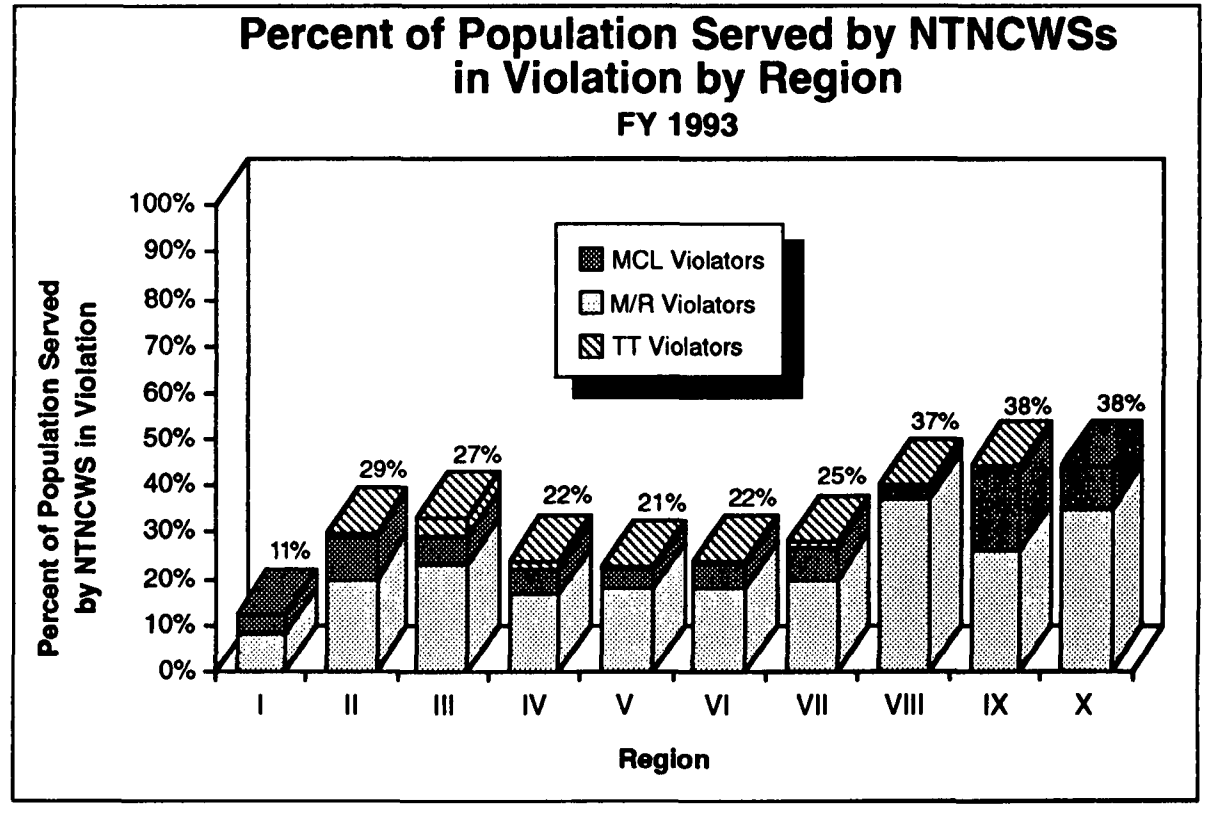
FRDS 07 (3/10/94).

Note: Categories total more than actual percentages of systems with violations because some systems have a combination of MCL, M/R, and/or TT violations. For example, 46% of the NTNCWSs in Region VIII had FY 1993 violations; however the individual percentages of NTNCWSs with MCL,M/R, and TT violations were 3%, 44%, and 1% respectively.

Compliance With Federal Regulations (cont.)

FY 1993 Regional Compliance Profile - NTNCWSs

The following chart shows the regional profile of the percent of population served by NTNCWSs that were in violation during FY 1993.



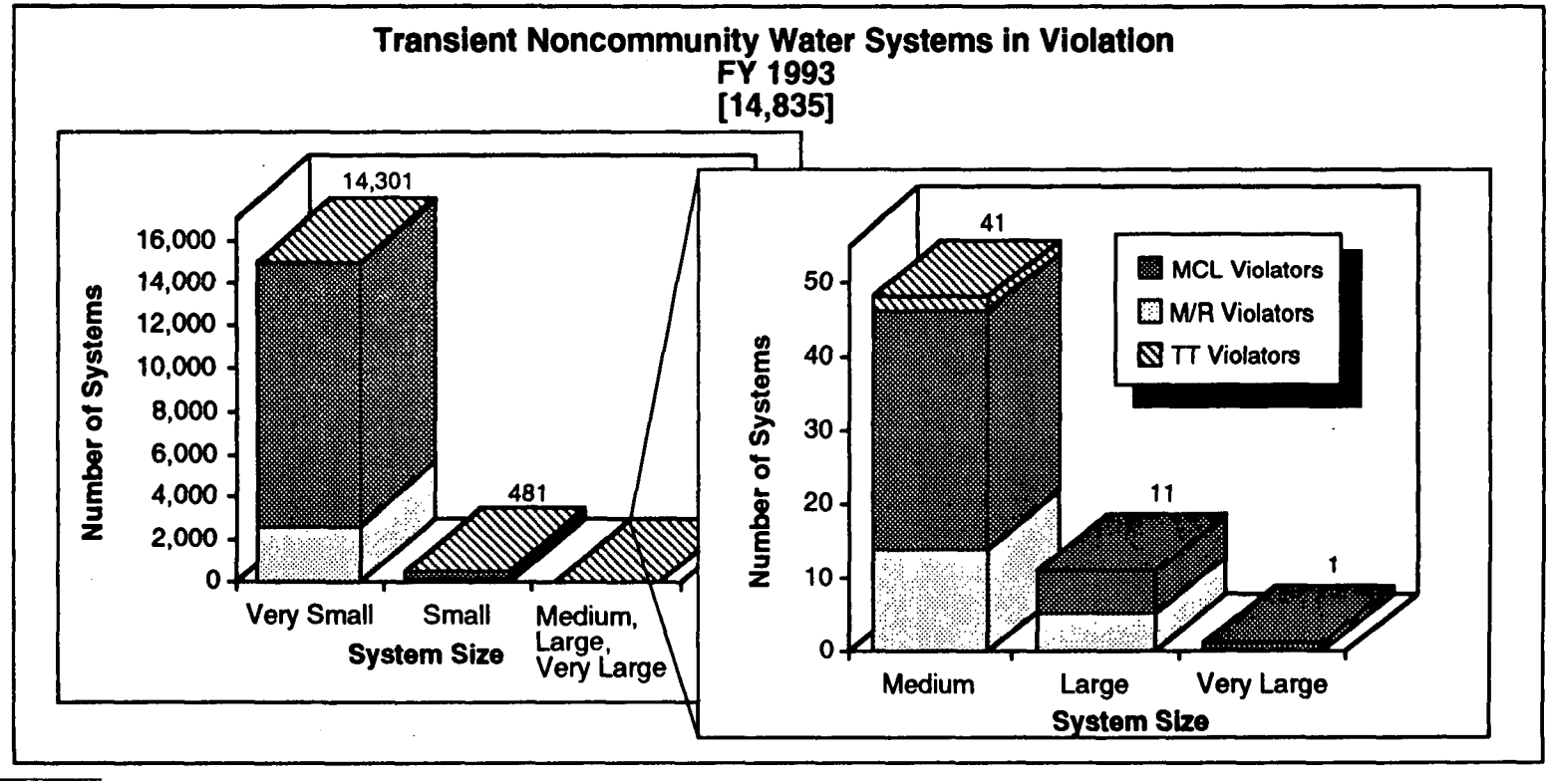
FRDS 07 (3/10/94).

Note: Categories total more than actual percentages of population served by systems with violations because some systems are violators for MCL, M/R, and/or TT. For example, in Region III, 27% of the population was served by NTNCWSs with FY 1993 violations; however, the individual percentages of population served by NTNCWSs with MCL, M/R, and TT violations were 6%, 23%, and 4%, respectively.

Compliance With Federal Regulations (cont.)

FY 1993 National Compliance Profile - Transient Noncommunity Water Systems

The following chart displays the system size distribution of Transient Noncommunity Water Systems (TNCWSs) that violated the MCL, M/R, and/or TT requirements during FY 1993. As with CWSs and NTNCWSs, the vast majority of TNCWSs in violation (>99%) are very small or small; however, very small systems comprise 97 percent of the TNCWS universe. Approximately 3 percent of all TNCWSs violated the MCL standards, 12 percent violated the M/R requireme and less than 1 percent violated the TT requirements.



FRDS 07 (3/10/94).
Note: The number over each bar is the number of TNCWSs that had an MCL, M/R, and/or TT violation. However, the height of the bar shows the actual number of TNCWSs with each of the three violation types and includes double and triple counting. For example, the number of medium TNCWSs with MCL violations (14), plus the number with M/R violations (32), plus the number with TT violations (2) equals 48, and exceeds the number of medium TNCWSs in violation (41), because some systems had a combination of MCL, M/R, and/or TT violations.

Significant Noncompliance

Significant Noncompliance

FY 1993 National Profile

Significant noncompliers (SNCs) are CWSs, NTNCWSs and TNCWSs (serving > 500 people) that have more serious, frequent, or persistent violations. SNCs are divided into M/T SNCs and C/R SNCs. The criteria which designate a system as an SNC vary by contaminant.

In order to be more protective of public health, the SNC definitions for M/T and C/R parameters were revised to be more stringent. These new SNC definitions became effective at the start of FY 1991. Pages 43 and 44 include these new definitions.

Beginning on January 1, 1991, monitoring requirements under the new Total Coliform Rule (TCR) became effective; that is, TCR violations were beginning to be incurred and reported to FRDS. The first TCR SNCs were determined at the end of June 1991[1].

Beginning on January 1, 1992, monitoring requirements under the new Lead and Copper Rule (LCR) became effective for large systems. The first LCR SNCs for large systems were determined in October 1992[1]. Medium systems began monitoring on July 1, 1992, and became LCR SNCs in October 1993[1].

Under the new Surface Water Treatment Rule (SWTR), an unfiltered system that was informed of the requirement to filter before January 1992 that did not install filtration by June 29, 1993, became an SWTR SNC on June 30, 1993[1].

The chart on page 45 shows the trends for M/T and C/R SNCs from FY 1986 to FY 1990 under the old SNC definition[1]. The number of M/T and C/R SNCs declined from FY 1986 to FY 1990. The chart on page 46 shows the trend from FY 1991 to FY 1993, which reflects the implementation of the more stringent SNC definition and the new SNC definitions for TCR, SWTR, and LCR[1].

Once a system is designated as an SNC, it is subject to EPA's timely and appropriate (T&A) policy, and is added to EPA's SNCs/Exceptions tracking system. SNCs that were not addressed during their respective T&A periods are called exceptions. Unlike the charts on pages 45 to 46, which represent numbers of SNCs in FRDS, pages 47 to 65 discuss trends and distribution of those SNCs for which T&A has expired during or prior to FY 1993. For a more detailed explanation of T&A, see page 47.

Since the LCR became effective after the beginning of FY 1993, systems that qualified as lead SNCs under the old definition (exceeding twice the MCL) are included as FY 1993 SNCs that were subject to the T&A policy. LCR TT SNCs and SWTR TT SNCs were not included in the SNC trends and distributions portrayed on pages 47 to 65, since T&A for these TT SNCs expires in FY 1994.

[1]The SNCs discussed in this text represent any systems that met the definition of SNC by quarter from FY 1986 to FY 1993, based on violation data in FRDS.

Significant Noncompliance (cont.) - SNC Definitions

Total Coliform Rule (TCR) MCL

- MONTHLY MONITORING: ≥ 4 acute/monthly MCL violations in any 12 consecutive months.
- QUARTERLY MONITORING: ≥ 3 acute/monthly MCL violations in any 4 consecutive quarters.
- ANNUAL MONITORING: ≥ 2 acute/monthly MCL violations in any 2 consecutive periods.

Total Coliform Rule (TCR) M/R

- MONTHLY MONITORING: In any 12 consecutive months, meeting one of the following criteria:
  - ≥ 4 major repeat M/R violations
  - ≥ 4 combined major repeat M/R and MCL violations
  - ≥ 6 combined major repeat M/R, major routine M/R, and/or MCL violations
  - ≥ 10 combined major/minor routine/repeat M/R and/or MCL violations
- QUARTERLY MONITORING: In any 4 consecutive quarters, meeting one the following criteria:
  - ≥ 3 major repeat M/R violations
  - ≥ 3 major repeat M/R, major routine M/R and/or MCL violations
- ANNUAL MONITORING: In any 2 consecutive one-year periods, meeting one of the following criteria:
  - ≥ 2 major repeat M/R violations
  - ≥ 2 combined major repeat M/R, major routine M/R, and/or MCL violations

Turbidity MCL

- MONTHLY MONITORING: ≥ 4 MCL violations in any 12 consecutive months.
- QUARTERLY MONITORING: ≥ 2 MCL violations in any 4 consecutive quarters.

Turbidity M/R and Combined M/R and MCL

- Monthly MONITORING: In any 12 consecutive months, having either of the following:
  - ≥ 6 major M/R and/or MCL violations, or
  - ≥ 10 major/minor M/R and/or MCL violations
- QUARTERLY MONITORING: ≥ 3 major M/R and/or MCL violations in any 4 consecutive quarters.
- ANNUAL MONITORING: ≥ 2 major M/R and/or MCL violations in any 2 consecutive one-year periods.

Chemical/Radiological MCL (excluding Nitrate)

- Exceeds the short term acceptable risk to health level.

Nitrate MCL

- > 10 mg/l.

Chemical/Radiological M/R

- Fails to monitor for, or report the results of any regulated contaminant for ≥ 2 consecutive compliance periods.

Public Notification

- Failure to provide public notification of the violation which caused the system to become an SNC.

Significant Noncompliance (cont.) - SNC Definitions

Surface Water Treatment Rule (SWTR)

- UNFILTERED SYSTEMS
  - A system informed of the requirement to filter before January, 1992 that does not install filtration by June 29, 1993.
  - A system informed of the requirement to filter after December, 1991 that does not install filtration within 18 months of being informed that filtration is required.
  - A system that has 3 or more major M/R violations in any 12 consecutive months.

- FILTERED SYSTEMS
  - A system that has 4 or more treatment technique violations in any 12 consecutive months.
  - A system that has a combination of 6 violations including treatment technique violations and major M/R violations in any 12 consecutive months.

Lead and Copper Rule (LCR)

- INITIAL TAP M/R
  A system which does not M/R as required and does not correct a violation within:
  - 3 months for large systems
  - 6 months for medium systems
  - 12 months for small systems

- OPTIMAL CORROSION CONTROL INSTALLATION
  A system which fails to install optimal corrosion control on time and has a 90th percentile lead level of ≥ 30 ppb in its most recent monitoring period.

- SOURCE WATER TREATMENT INSTALLATION
  A system which fails to install source water treatment on time and has a 90th percentile lead level of ≥ 30 ppb in its most recent monitoring period.

- PUBLIC EDUCATION
  A system which fails to complete public education as required and has a 90th percentile lead level of ≥ 30 ppb in its most recent monitoring period.

Notes

(1) A "major" M/R violation (except for SWTR) occurs when no samples are taken or no results are reported during a compliance period. For SWTR, a major M/R violation occurs when at least 90% of the required samples are not taken or results reported during a reporting period.

(2) A "minor" M/R violation (except for SWTR) occurs when an insufficient number of samples are taken or incomplete results are reported during a compliance period. For SWTR, a minor violation occurs when less than 100% but more than 90% of the required samples are not taken or results reported during a reporting period.

(3) SNC definition is modified, if needed, to cover new regulations as they are promulgated.

(4) For details on the SNC definition, please see the following *memorandum*:

(a) "Revised Definition of Significant Noncomplier (SNC) and the Model for Escalating Responses to Violations in the PWSS Program." May 22, 1990. [Water Supply Guidance #70]

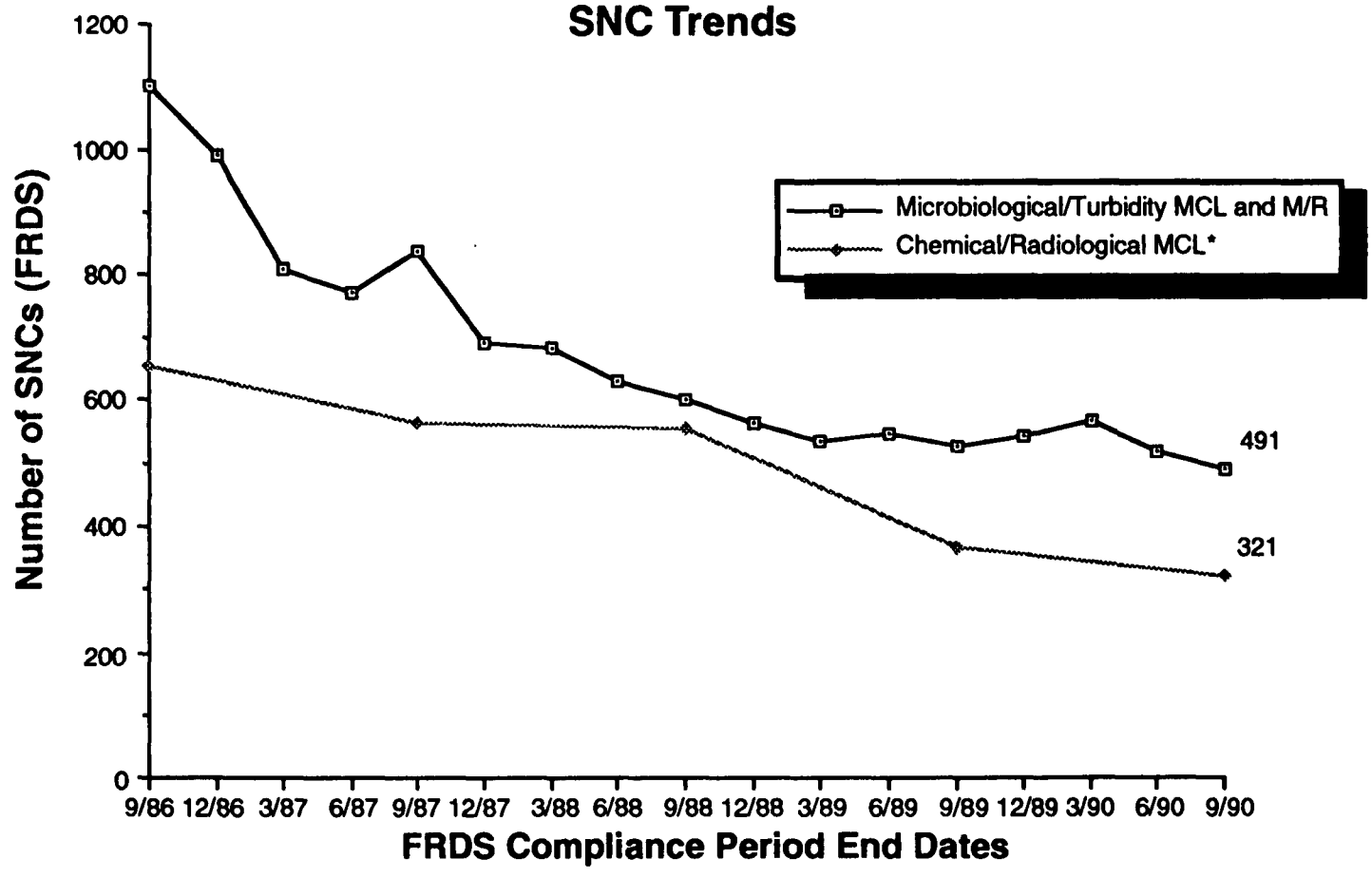
(b) "Final SNC Definition for the TCR and proposed SNC Definition for the SWTR." December 19, 1990. [Water Supply Guidance #80]

(c) "Final SNC Definition for the SWTR." February 28, 1991. [Water Supply Guidance #82]

(d) "Final Guidance for the Lead and Copper - Definitions and Federal Reporting for Milestones, Violations, and SNCs." May, 1992.

Significant Noncompliance (cont.)

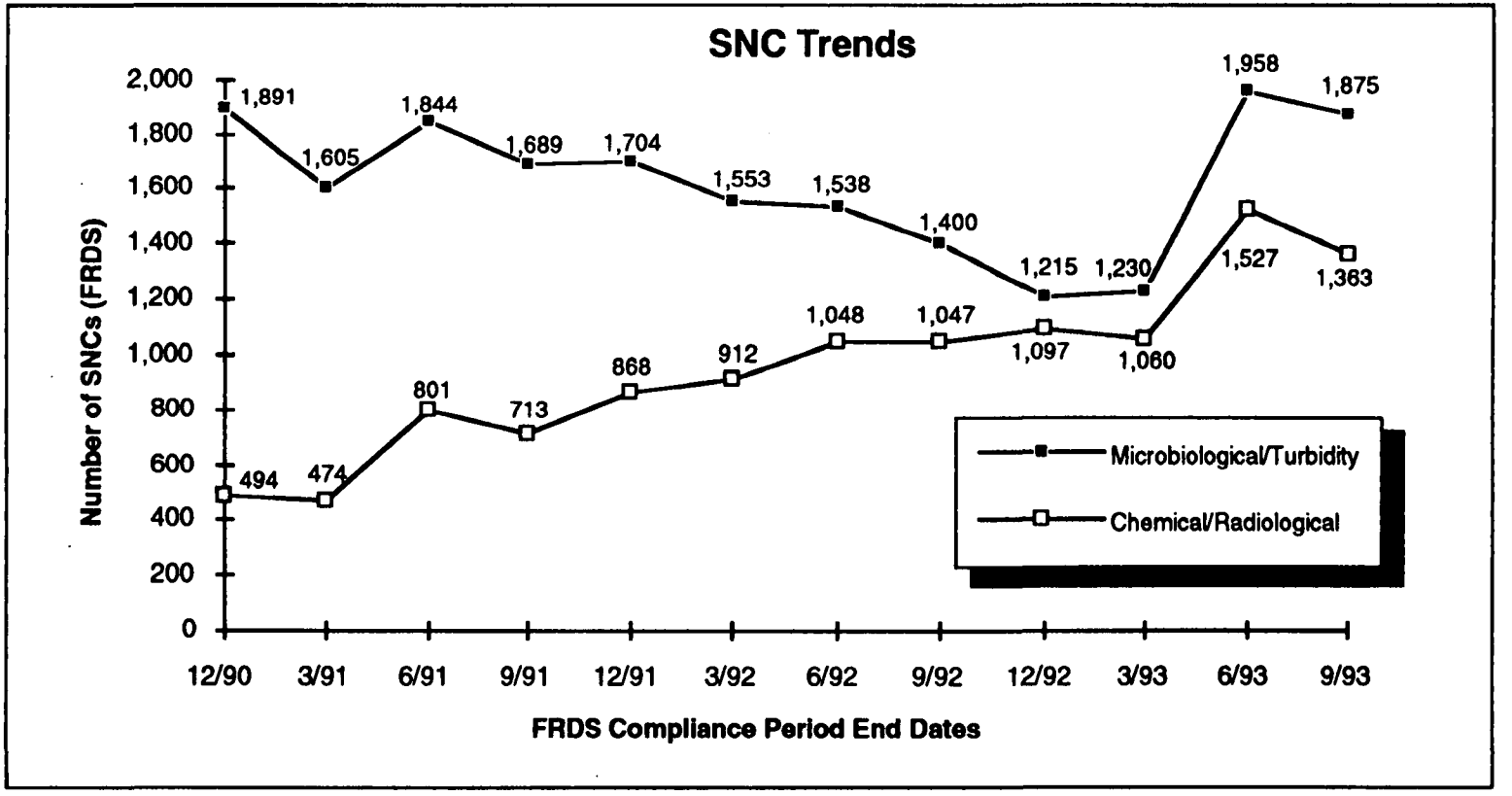
The chart below demonstrates that the number of SNCs for both M/T and C/R SNCs declined from FY 1987 through FY 1990. Since FY 1987, M/T SNCs decreased more than 55 percent, while C/R MCL SNCs decreased almost 51 percent.



FRDS 41B and 41D, quarterly reports through 1990.
*Does not include Chemical/Radiological M/R SNCs.
Note: The number of SNCs portrayed in this graph represents any systems that met the definition of SNC by quarter from FY 1987 to FY 1990, based on violation data in FRDS.

Significant Noncompliance (cont.)

The chart below shows that the number of M/T SNCs has declined from FY 1991 to the first half of FY 1993. However, during the same time period, the number of C/R SNCs has steadily increased, due largely to increased reporting. The number of SNCs dramatically rose in the second half of FY 1993, due largely to the implementation of the new SNC definitions for the SWTR and the LCR.



FRDS 42 and 43, quarterly reports through 1993.
Note: The numbers of SNCs portrayed in this graph represent any systems that met the definition of SNC by quarter from FY 1991 to FY 1993, based on violation data in FRDS.

Significant Noncompliance (cont.)

Timely and Appropriate Actions

Once a system is classified as an SNC, it is EPA's policy that the system be addressed in a T&A fashion. In FY 1993, an appropriate enforcement action was any of the following:

- Bilateral Compliance Agreement,
- State/Federal Administrative Order,
- State/Federal Civil Referral, or
- State/Federal Criminal Filing.

To be considered timely, an action must have been taken against either an M/T or C/R SNC within six months.

A system also is considered to be addressed in a T&A fashion, if within six months, the State or EPA indicates that the system has returned to compliance, no longer meets the definition of a PWS, or has incorrect violations in FRDS.

A system that was not addressed in a timely fashion becomes an "exception" and a high priority for Federal action. The charts on the following page show the number and percent of SNCs and exceptions resolved during FY 1988 - FY 1993. The percentages for resolution of new M/T SNCs addressed in a T&A manner increased from 54 percent in FY 1988 and FY 1989 to 61 percent in FY 1990. In FY 1991, with the implementation of a more stringent SNC definition that included NTNCWSs, the resolution rate decreased slightly to 57 percent but the number of SNCs increased significantly from 472 in FY 1990 to 3,411 systems in FY 1991. In FY 1992, the SNC definition was further modified to include TCR. The resolution rate decreased slightly to 54 percent; however, the overall number also decreased (1,895). In FY 1993, the resolution rate has increased to 65 percent, and the number of M/T SNCs has continued to decrease.

The percentages for resolution of new C/R SNCs addressed in a T&A manner increased from 43% in FY 1988 to 81% in FY 1990. In FY 1991, with the implementation of a more stringent SNC definition, the resolution rate decreased to 65%, and the number of SNCs increased significantly from 99 in FY 1990 to 691 in FY 1991. In FY 1993, the LCR was implemented and aggressively enforced against for large systems. Consequently, the resolution rate has increased to 71%.

The resolution of systems that are M/T exceptions has increased in rate and number from 48 percent (555) in FY 1990 to 72 percent (917) in FY 1993. The resolution rate for C/R exceptions also increased significantly in rate and number from 60 percent (130) in FY 1990 to 78 percent (455) in FY 1993. Traditionally, systems that are exceptions are difficult to resolve because the vast majority of these systems are very small or small and lack the financial and technical capabilities to comply with the complex requirements of the SDWA and its regulations. In addition, exceptions systems in Alaska and Puerto Rico face further constraints due to cultural differences. Twelve (12%) percent and 19 percent of exceptions that remained unresolved at the end of the fiscal year were located in Alaska and Puerto Rico, respectively.

Source: Timely and Appropriate Reports, FY 1988 to FY 1993.

Significant Noncompliance (cont.)

Timely and Appropriate Actions (cont.)

Resolution of SNCs												
SNC Type	FY 88		FY 89		FY 90		FY 91		FY 92		FY 93	
	Number Systems	Percent Resolved	Number Systems	Percent Resolved	Number Systems	Percent Resolved	Number Systems	Percent Resolved	Number Systems	Percent Resolved	Number Systems	Percent Resolved
Microbiological/Turbidity	1,283	54%	334	54%	472	61%	3,411	57%	1,895	54%	1,210	65%
Chemical/Radiological	3,161	43%	147	82%	99	81%	691	65%	803	42%	852	71%

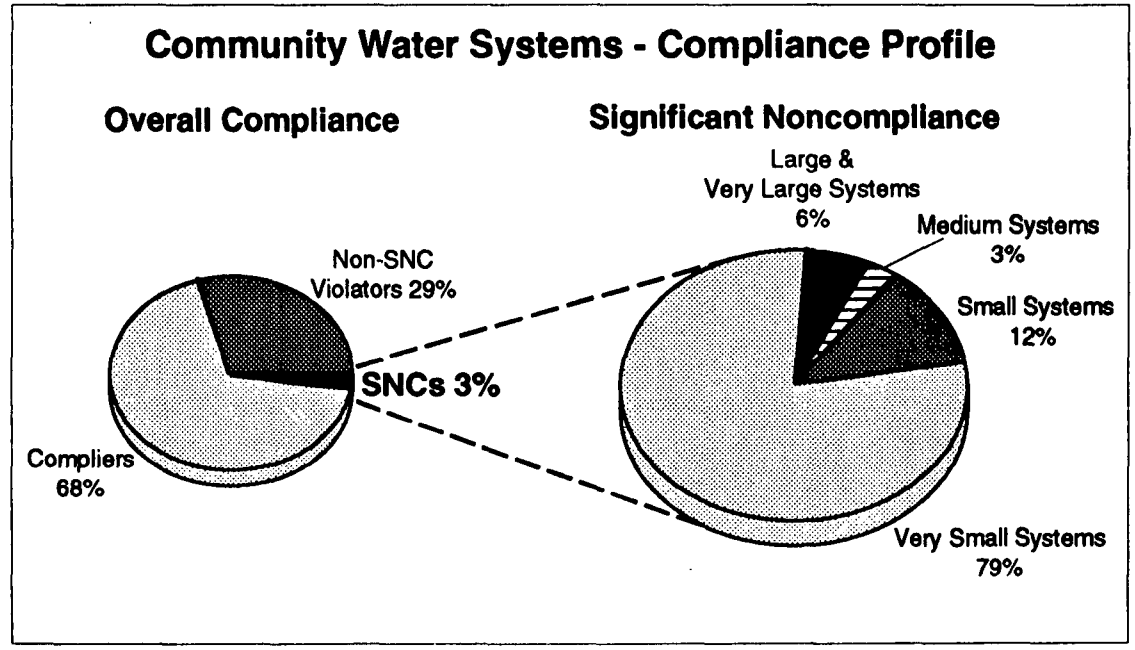
Resolution of Exceptions												
Exception Type	FY 88		FY 89		FY 90		FY 91		FY 92		FY 93	
	Number Systems	Percent Resolved	Number Systems	Percent Resolved	Number Systems	Percent Resolved	Number Systems	Percent Resolved	Number Systems	Percent Resolved	Number Systems	Percent Resolved
Microbiological/Turbidity	536	32%	396	56%	555	48%	1,524	66%	1,516	71%	917	72%
Chemical/Radiological	N/A	N/A	190	31%	130	60%	327	54%	545	76%	455	78%

Note: An SNC or exception is considered resolved if an appropriate enforcement action has been taken, the system has returned to compliance, was deactivated, or based on further investigation, was not an SNC.
Source: Timely and Appropriate Reports, FY 1988-1993.

Significant Noncompliance (cont.)

FY 1993 National Profile (cont.)

The chart below shows that of the 57,561 CWSs, only 3 percent (1,680) were in significant noncompliance in FY 1993. Of the 18,299 CWSs in violation in FY 1993, 9 percent were SNCs. Furthermore, 79 percent of the CWS SNCs in FY 1993 were very small water systems serving 500 or fewer people. Only 9 percent of the CWS SNCs served more than 3,300 people.

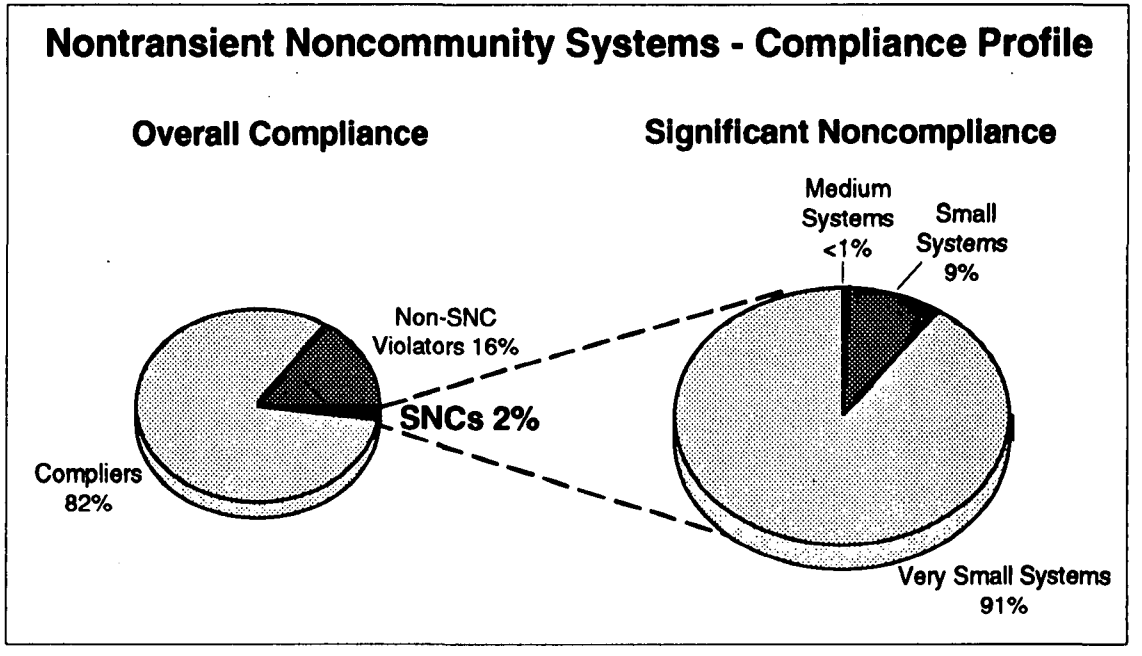


FRDS 07 (3/10/94).
Note: The number of SNCs portrayed in this chart represents the number of systems for which T&A expired during or prior to FY 1993, and therefore does not include TT SNCs, since T&A for TT SNCs expires in FY 1994.

Significant Noncompliance (cont.)

FY 1993 National Profile (cont.)

Approximately 2 percent (481) of the 23,992 NTNCWSs were in significant noncompliance in FY 1993. Of the 5,100 NTNCWSs in violation in FY 1993, 9 percent were SNCs. Furthermore, 91 percent of the NTNCWS SNCs in FY 1993 were very small water systems serving 500 or fewer people. Less than 1 percent of the NTNCWS SNCs served more than 3,300 people. None of the NTNCWS SNCs were large systems (i.e., served more than 10,000 people)[1].

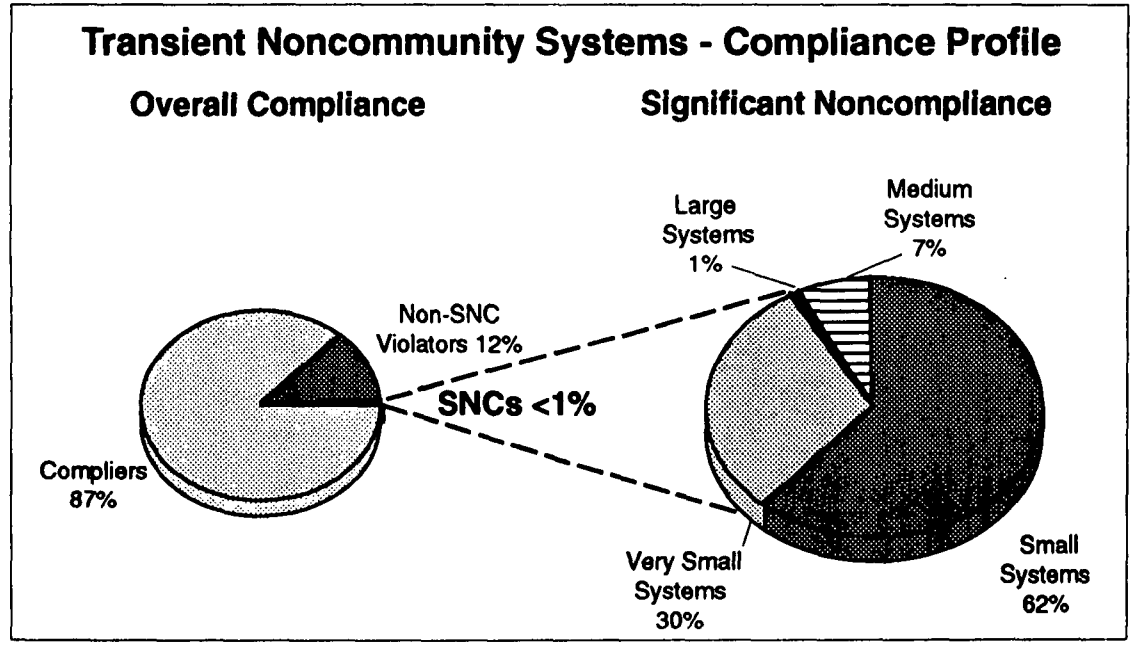


FRDS 07 (3/10/94).
Note: The number of SNCs portrayed in this chart represents the number of systems for which T&A expired during or prior to FY 1993, and therefore does not include TT SNCs, since T&A for TT SNCs expires in FY 1994.
[1]None of the NTNCWSs were very large systems (i.e., serving more than 100,000 people).

Significant Noncompliance (cont.)

FY 1993 National Profile (cont.)

Less than 1 percent (86) of the 109,714 TNCWSs were in significant noncompliance in FY 1993. Of the 14,835 TNCWSs in violation in FY 1993, less than 1 percent were SNCs. Furthermore, 92 percent of the TNCWS SNCs in FY 1993 were very small or small water systems, serving 3,300 or fewer people. None of the TNCWS SNCs were very large systems (i.e., served > 100,000 people).

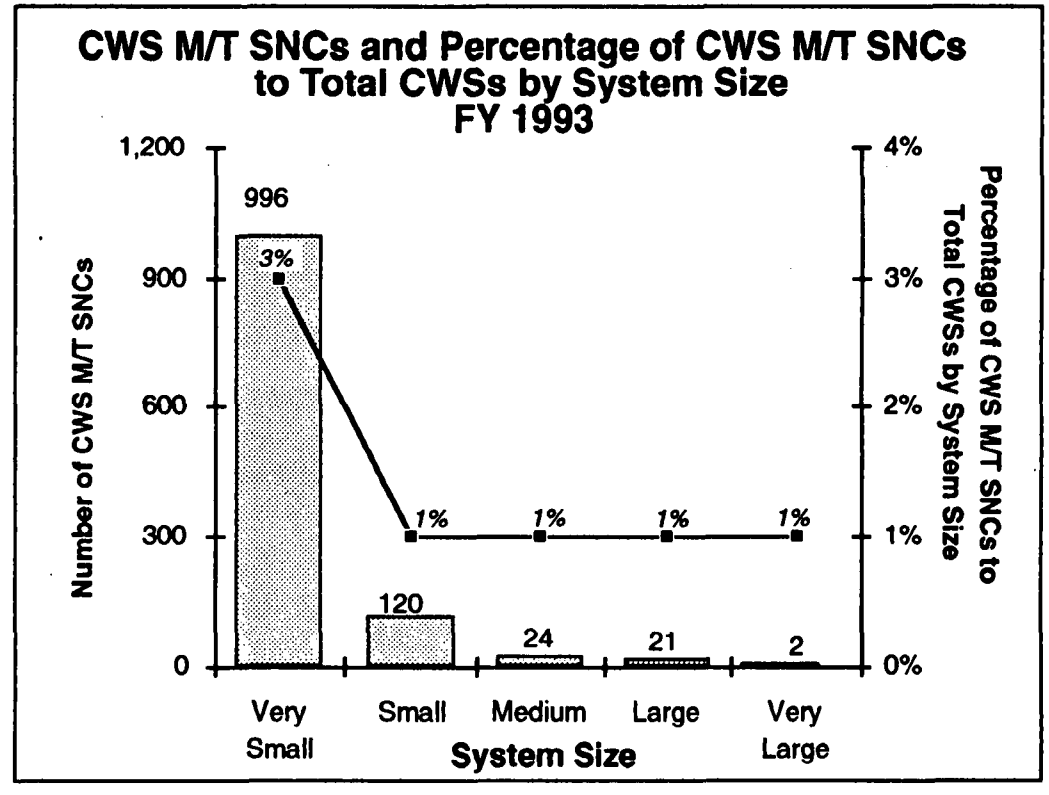


FRDS 07 (3/10/94).
Note: The number of SNCs portrayed in this chart represents the number of systems for which T&A expired during or prior to FY 1993, and therefore does not include TT SNCs, since T&A for TT SNCs expires in FY 1994.

Significant Noncompliance (cont.)

CWS Microbiological/Turbidity Significant Noncompliers

In FY 1993, 1,163 CWSs (2%) were SNCs for microbiological or turbidity requirements. Of these SNCs, 85 percent were classified as microbiological SNCs, 8 percent were turbidity SNCs, and 7 percent were both microbiological and turbidity SNCs. Sixty-nine (69%) percent of CWSs in significant noncompliance for these requirements violated the microbiological M/R requirements. Very small and small CWSs comprise 1,116 or 96 percent of the M/T SNCs.



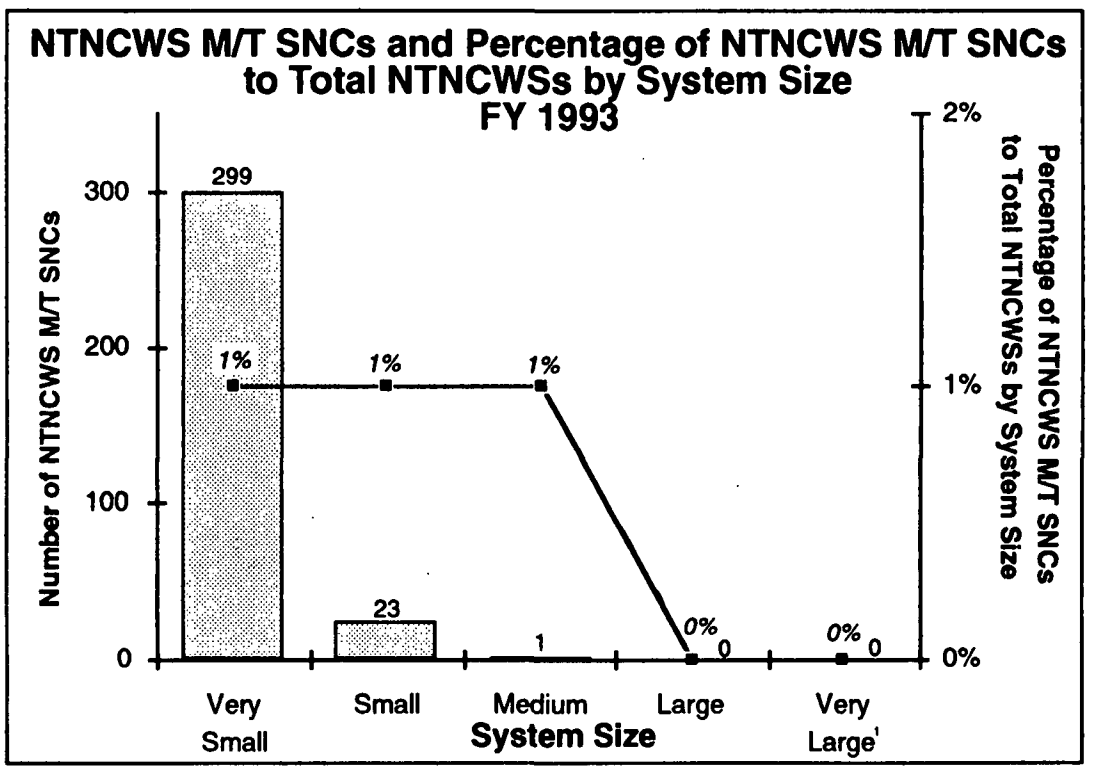
The percentages in this chart reflect the percent of very small, small, medium, large, and very large CWSs that were M/T SNCs. For example, although very small systems account for the majority of M/T SNCs, only 3% of all very small CWSs were SNCs. Similarly, only 1 percent of all small, medium, large and very large CWSs were M/T SNCs.

FRDS 07 (11/3/93, 3/10/94).
Note: The number of SNCs portrayed in this chart represents the number of systems for which T&A expired during or prior to FY 1993, and therefore does not include TT SNCs, since T&A for TT SNCs expires in FY 1994.

Significant Noncompliance (cont.)

NTNCWS Microbiological/Turbidity Significant Noncompliers

In FY 1993, 1 percent of all NTNCWSs were SNCs of microbiological or turbidity requirements. Ninety-nine (99) percent of these were classified as microbiological SNCs, and one (1) percent were turbidity SNCs. Eighty-seven (87%) percent of NTNCWSs in significant noncompliance for these requirements violated the microbiological M/R requirements. All but one of the M/T NTNCWS SNCs were very small or small systems. However, only 1 percent of all very small and small NTNCWSs were M/T SNCs.



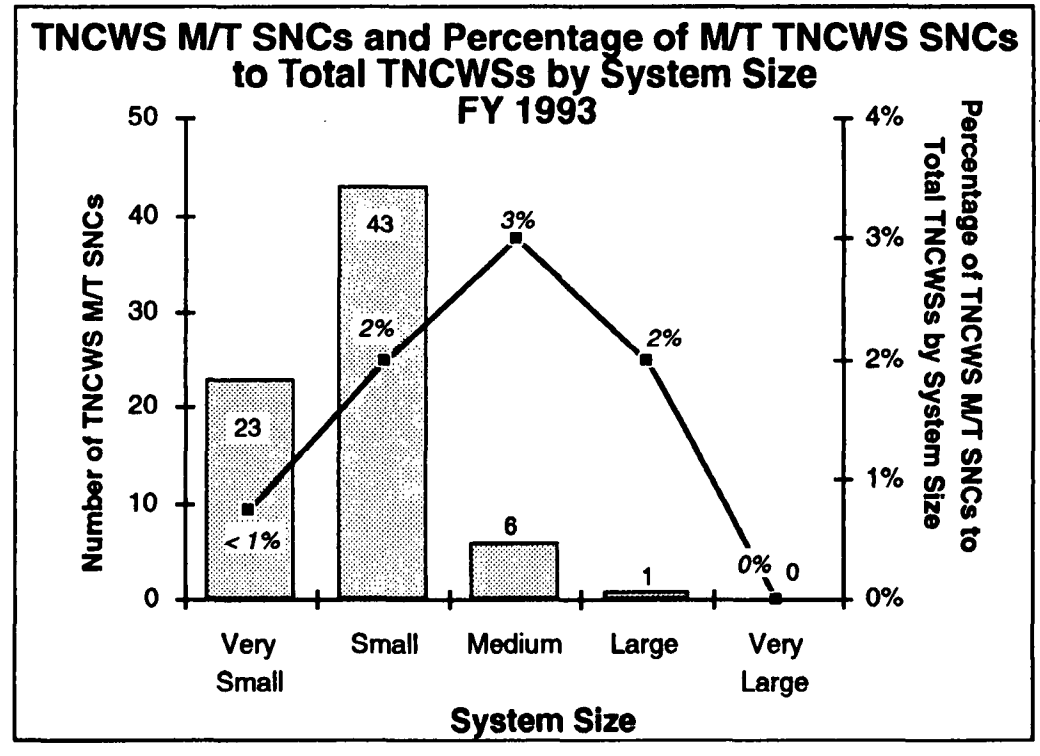
The percentages in this chart reflect the percent of very small, small, medium, and large NTNCWSs that were M/T SNCs. For example, although very small systems accounted for the majority of M/T SNCs, only 1 % of all very small NTNCWSs were SNCs. Similarly, only 1 percent of all small and medium NTNCWSs were SNCs. None of the large NTNCWSs were M/T SNCs.

FRDS 07 (11/3/93, 3/10/94).
Note: The number of SNCs portrayed in this chart represents the number of systems for which T&A expired during or prior to FY1993, and therefore does not include TT SNCs, since T& A for TT SNCs expires in FY 1994.
[1]None of the NTNCWSs were very large systems (i.e., serving more than 100,000 people).

Significant Noncompliance (cont.)

TNCWS Microbiological/Turbidity Significant Noncompliers

In FY 1993, less than 1 percent of all TNCWSs were SNCs of microbiological or turbidity requirements. Ninety (90) percent of these were classified as microbiological SNCs, 7 percent were turbidity SNCs, and 3 percent were both microbiological and turbidity SNCs. Eighty-five (85) percent of TNCWSs in significant noncompliance for these requirements violated the microbiological M/R requirements. Very small and small TNCWSs comprised 90 percent of the M/T SNCs for TNCWSs.



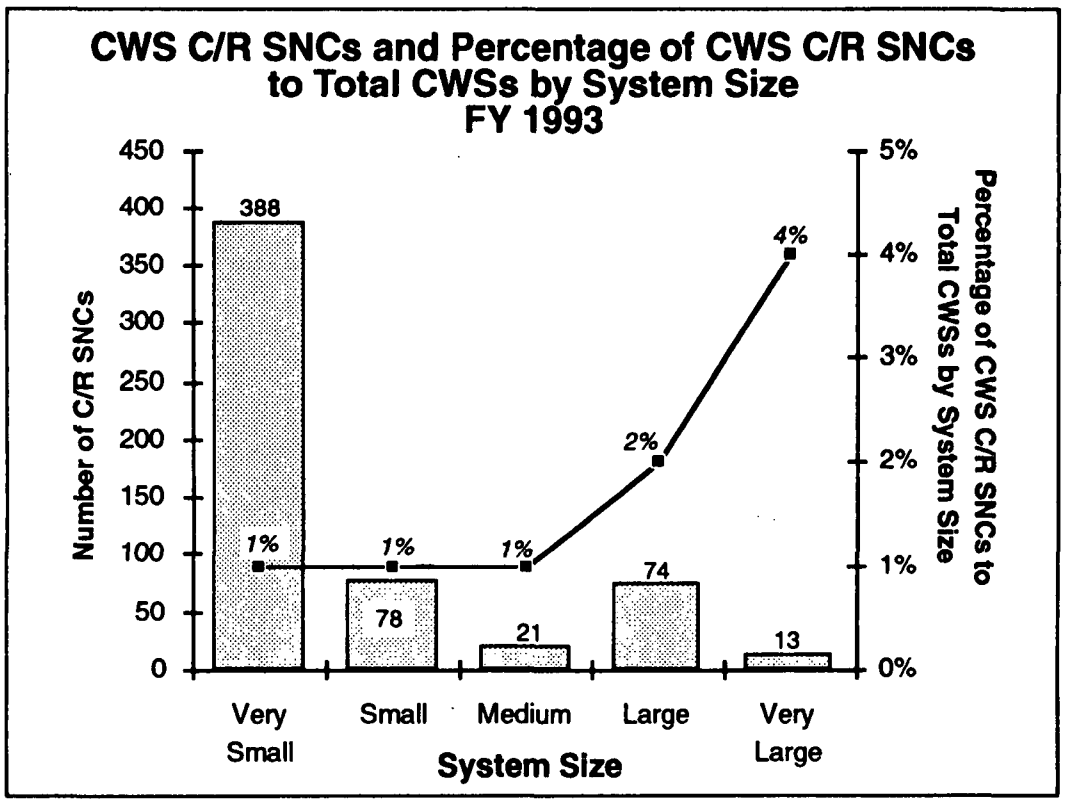
The percentages in this chart reflect the percent of small, medium, large, and very large TNCWSs that were M/T SNCs. For example, although very small or small systems accounted for the majority of the M/T SNCs, <1% of very small TNCWSs and only 2% of all small TNCWSs were SNCs. Similarly, only 3 percent of all medium and 2 percent of all large TNCWSs were M/T SNCs. None of the very large TNCWSs were M/T SNCs.

FRDS 07 (11/3/93, 3/10/94).
Note: The number of SNCs portrayed in this chart represents the number of systems for which T&A expired during or prior to FY1993, and therefore does not include TT SNCs, since T&A for TT SNCs expires in FY 1994.

Significant Noncompliance (cont.)

CWS Chemical/Radiological Significant Noncompliers

In FY 1993, 574 CWSs were SNCs for chemical or radiological requirements. Twenty-three (23) percent were classified as C/R MCL SNCs, 75 percent were C/R M/R SNCs, and 2 percent were both C/R MCL and M/R SNCs. As the following graph shows, 81 percent of the C/R SNCs were very small or small CWSs. One (1) percent of all very small, small, and medium CWSs were C/R SNCs. Two (2) percent of all large CWSs were C/R SNCs. Four (4) percent of all very large CWSs were C/R SNCs.

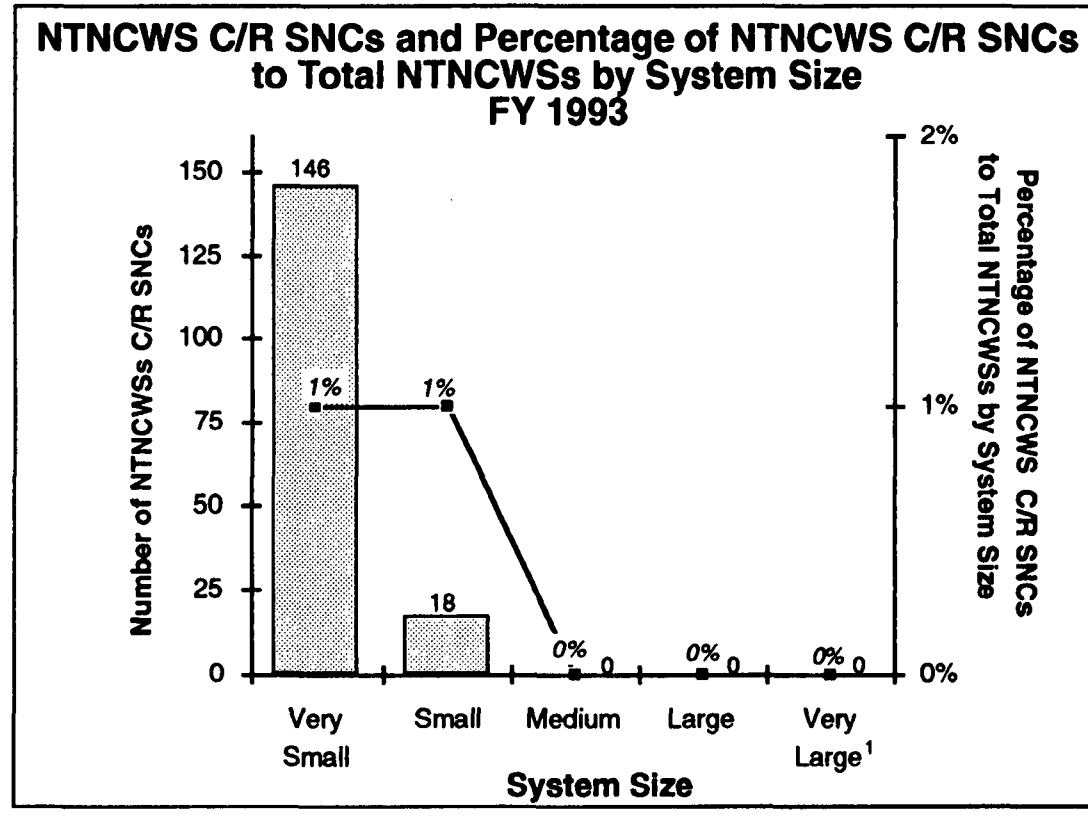


FRDS 07 (11/3/93, 3/10/94).
Note: The number of SNCs portrayed in this chart represents the number of systems for which T&A expired during or prior to FY 1993.

Significant Noncompliance (cont.)

NTNCWS Chemical/Radiological Significant Noncompliers

In FY 1993, 164 NTNCWSs were SNCs for chemical or radiological requirements. Forty (40) percent were classified as C/R MCL SNCs, 51 percent were C/R M/R SNCs, and 9 percent were both C/R MCL and M/R SNCs. As the following graph shows, 100 percent of the C/R SNCs were very small or small NTNCWSs. NTNCWS C/R SNCs represent only 1 percent of all very small and small NTNCWSs.

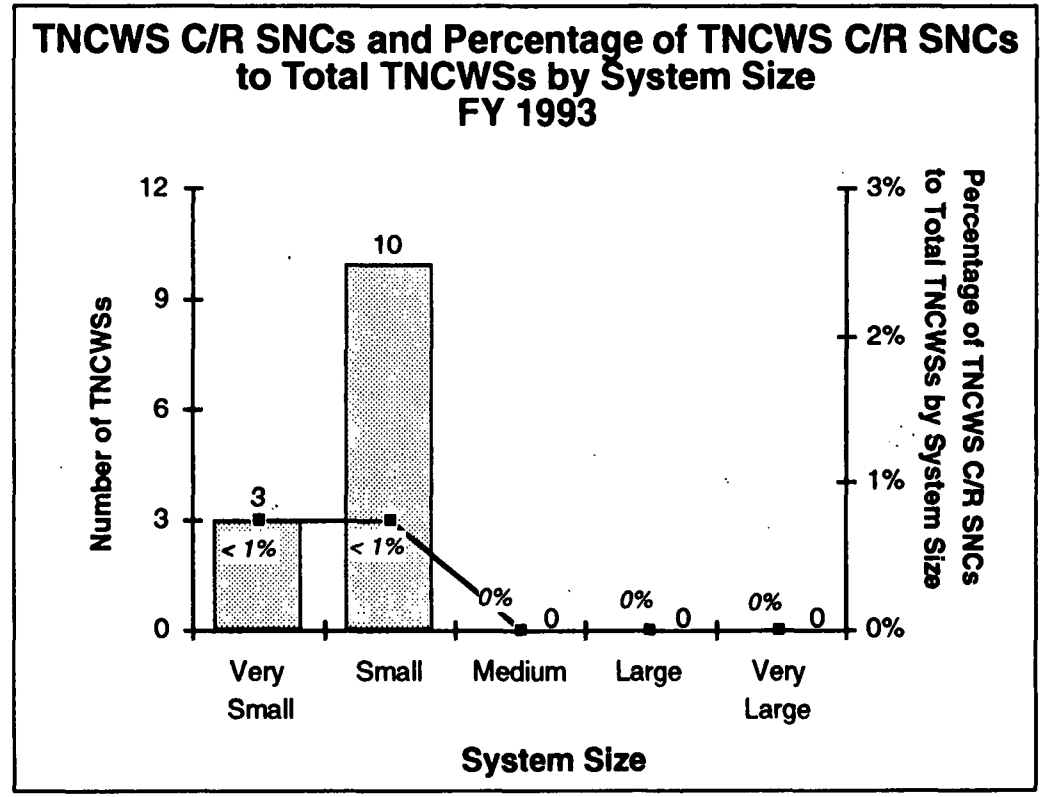


FRDS 07 (11/3/93, 3/10/94).
Note: The number of SNCs portrayed in this chart represents the number of systems for which T&A expired during or prior to FY 1993.
[1]None of the NTNCWSs were very large systems (i.e., serving more than 100,000 people).

Significant Noncompliance (cont.)

TNCWS Chemical/Radiological Significant Noncompliers

In FY 1993, 13 TNCWSs (< 1%) were SNCs for nitrate requirements[1]. Fifty-four (54) percent were classified as nitrate MCL SNCs, and 46 percent were nitrate M/R SNCs. As the following graph shows, 77 percent of the C/R SNCs were small TNCWSs.



FRDS 07 (11/3/93, 3/10/94).

Note: The number of SNCs portrayed in this chart represents the number of systems for which T&A expired during or prior to FY 1993.

[1]TNCWSs are not required to monitor for other chemical or radiological contaminants, because unlike nitrate, the health effects of these other contaminants require long-term exposure. Because a TNCWS caters to transitory customers, it does not provide a consistent source of drinking water for an individual.

Significant Noncompliance (cont.)

Chemical/Radiological MCL Significant Noncompliers

The table below shows the distribution of the C/R MCL SNCs by individual contaminant category and type of PWS. A total of 229 systems (142 CWSs, 80 NTNCWSs, and 7 TNCWSs) were C/R MCL SNCs in FY 1993. The numbers in the table total more than 229 because some systems violated standards for more than one contaminant.

Chemical/Radiological MCL SNCs By Contaminant Violated and Type of PWS

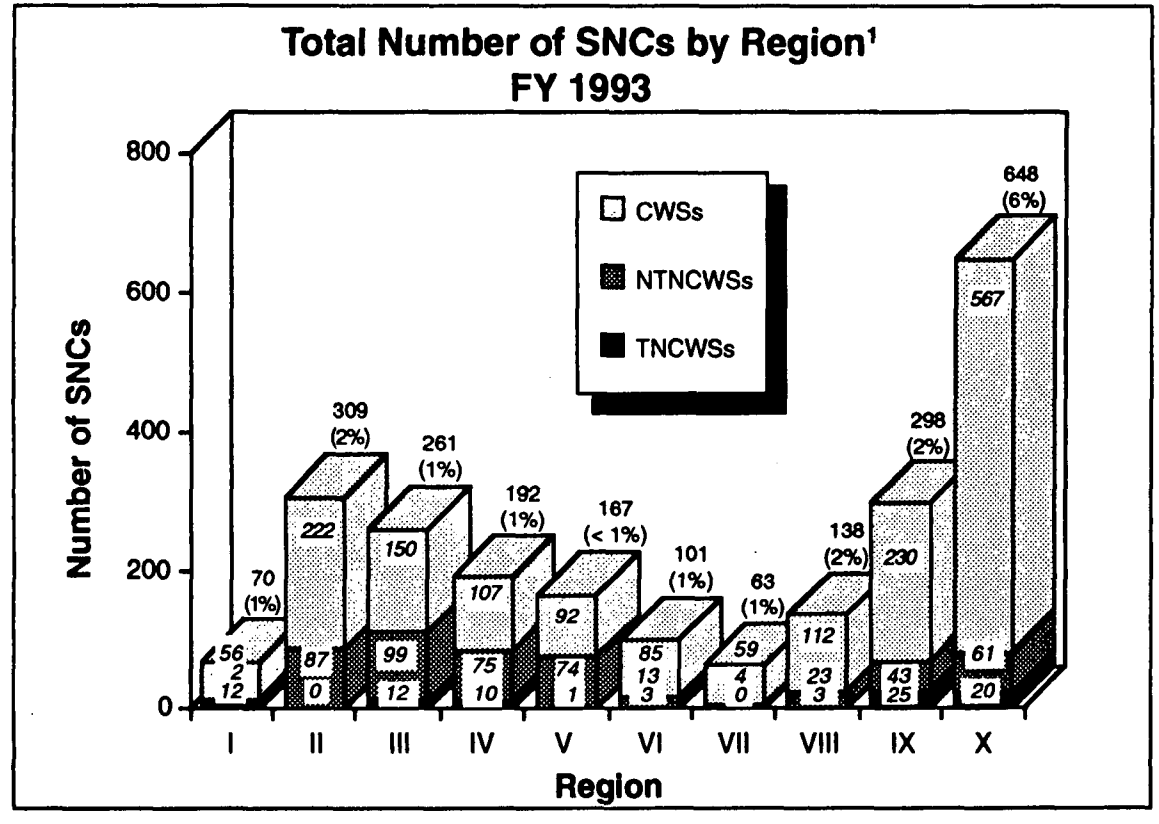
Contaminant	SNCs				Contaminant	SNCs			
	CWS	NTNCWS	TNCWS[1]	Total		CWS	NTNCWS	TNCWS	Total
Arsenic	5	0	N/A	5	TTHM	6	0	N/A	6
Barium	0	0	N/A	0					
Cadmium	0	0	N/A	0	*p*-Dichlorobenzene	0	0	N/A	0
Chromium	0	0	N/A	0	Vinyl Chloride	0	4	N/A	4
Fluoride	18	0	N/A	18	1,1-Dichloroethylene	3	9	N/A	12
Lead[2]	4	0	N/A	4	1,2-Dichloroethane	1	4	N/A	5
Mercury	0	0	N/A	0	1,1,1-Trichloroethane	2	3	N/A	5
Nitrate	64	42	7	113	Carbon Tetrachloride	2	1	N/A	3
Selenium	2	0	N/A	2	Trichloroethylene	12	22	N/A	34
					Benzene	3	5	N/A	8
Endrin	1	0	N/A	1					
Lindane	1	0	N/A	1	Tetrachloroethylene	0	0	N/A	0
Methoxychlor	1	0	N/A	1					
Toxaphene	1	0	N/A	1	Gross Alpha	5	0	N/A	5
2,4-D	1	0	N/A	1	Combined Radium	18	0	N/A	18
2,4,5-TP (Silvex)	1	0	N/A	1	Gross Beta	1	0	N/A	1

Note: The number SNCs portrayed in this chart represents the number of systems for which T&A expired during or prior to FY 1993.
[1]The SNC definitions for chemical and radiological contaminants are not applicable (N/A) to TNCWSs with the exception of nitrate for systems serving ≥ 500 persons.
[2]The MCL for lead remained in effect until the LCR became effective on 12/7/92.

Significant Noncompliance (cont.)

FY 1993 Regional Profile - Total Number of Significant Noncompliers

The following chart shows the FY 1993 Regional SNC total (2,247) for each of the three system types. In addition, the percent of all PWS types that are SNCs are shown in parentheses.

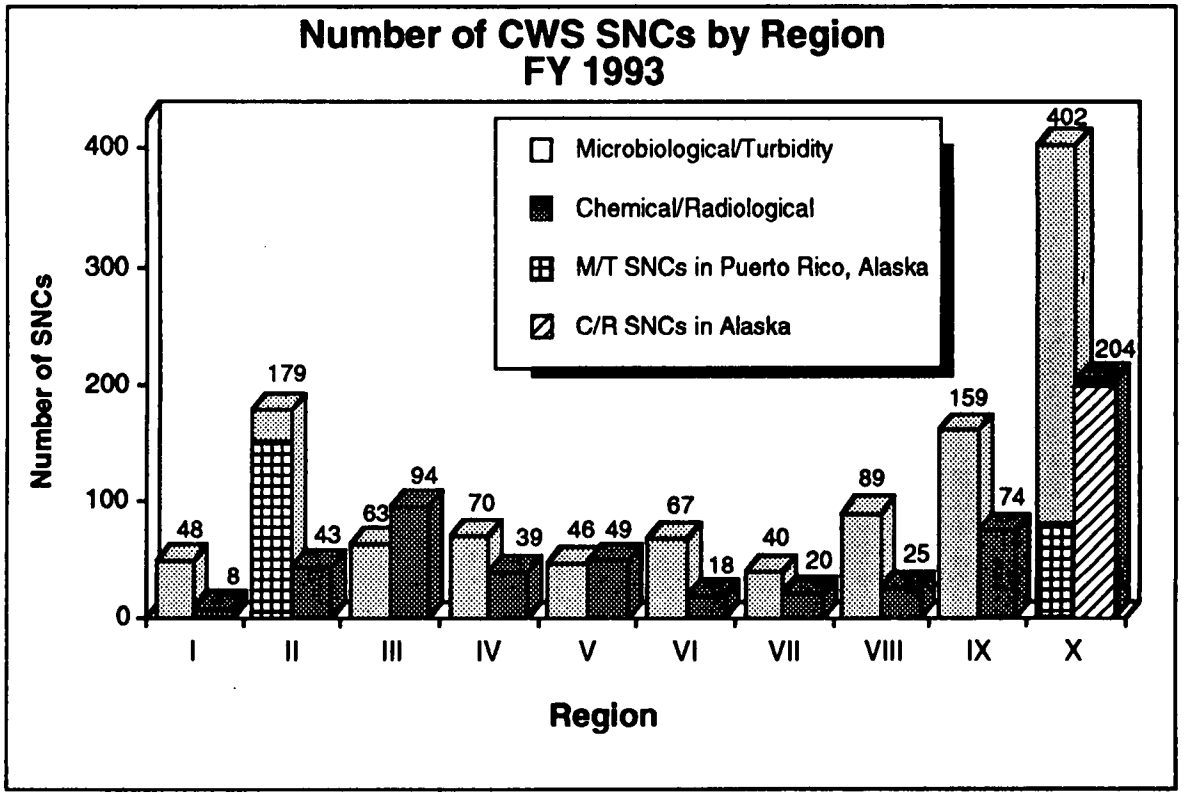


FRDS 07 (11/3/93, 3/10/94).
Note: The number of SNCs portrayed in this chart represents the number of systems for which T&A expired during or prior to FY1993, and therefore does not include TT SNCs, since T&A for TT SNCs expires in FY 1994.

Significant Noncompliance (cont.)

FY 1993 Regional Profile - CWS Significant Noncompliers

The following chart shows significant noncompliance in the ten EPA Regions in FY 1993. The area shaded with cross-hatching represents the proportion of SNCs in Region II and Region X attributed respectively to Puerto Rico and Alaska. As discussed earlier, these systems often face cultural and language barriers, transportation difficulties, and more limited resources than in other areas. Whereas nationally, only 3 percent (1,680) of CWSs are in significant noncompliance, 34 percent (151) of the CWSs in Puerto Rico are SNCs. Similarly, in Alaska, 34 percent (244) of the CWSs are SNCs.

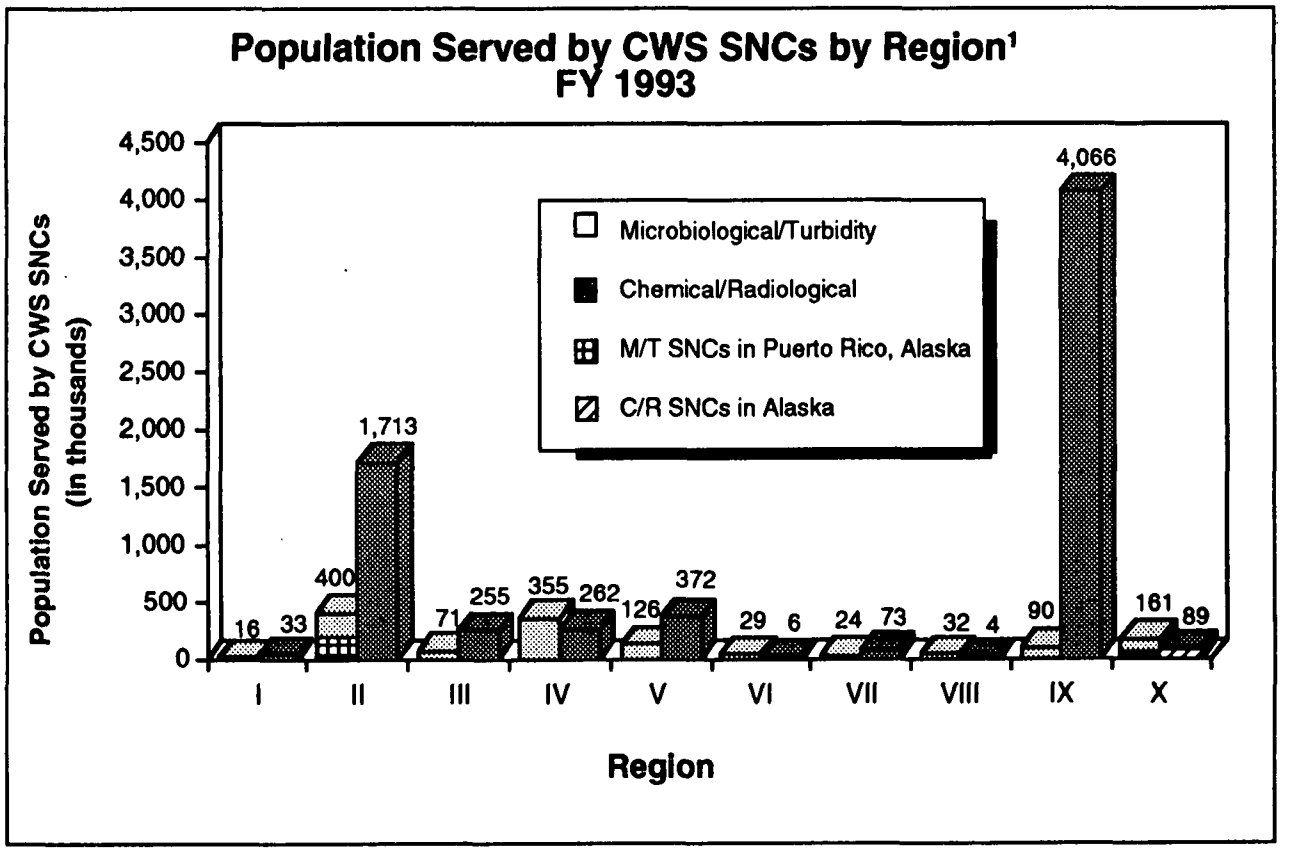


FRDS 07 (11/3/93, 3/10/94).
Note: The number SNCs portrayed in this chart represents the number of systems for which T&A expired during or prior to FY 1993, and therefore does not include TT SNCs, since T&A for TT SNCs expires in FY 1994.

Significant Noncompliance (cont.)

FY 1993 Regional Profile - CWS Significant Noncompliers

The following chart shows population affected by CWS SNCs in the ten EPA Region in FY 1993. Many large systems were LCR SNCs in Regions II and IX.

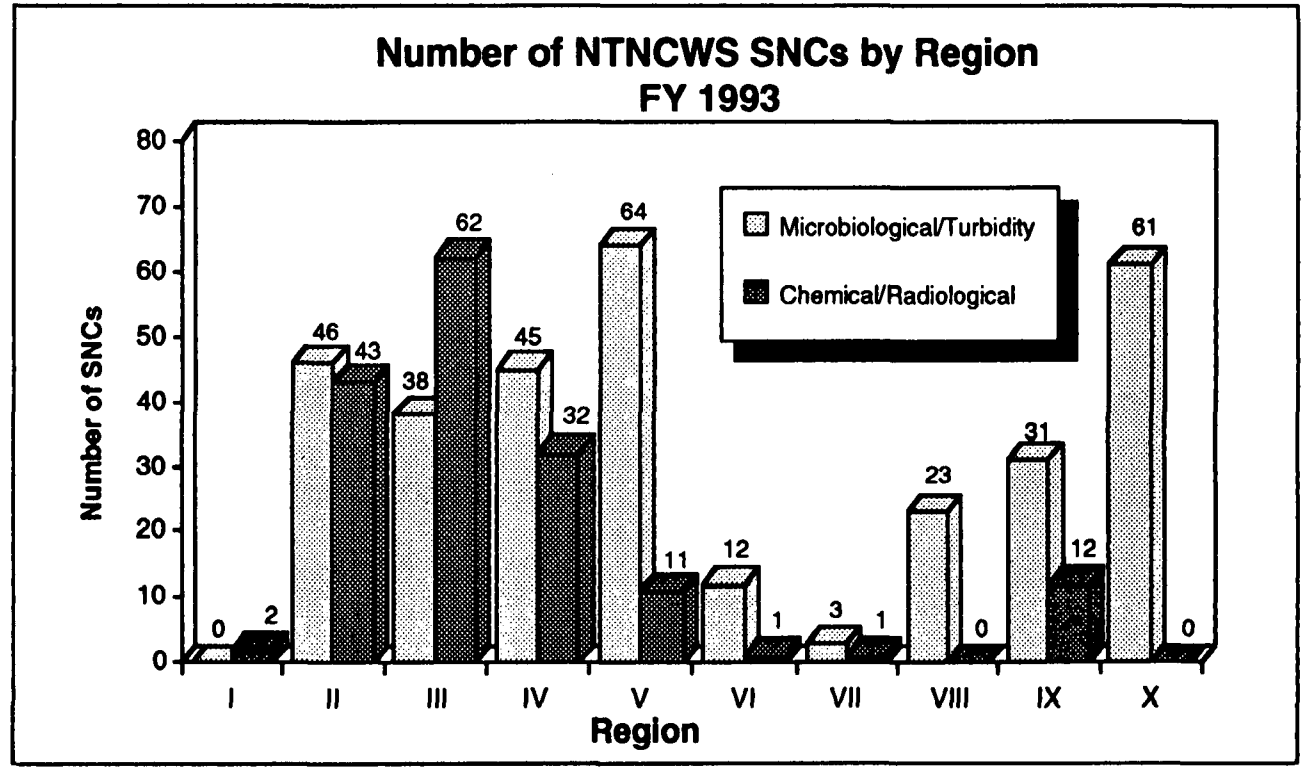


FRDS 07 (11/03/93).
Note: The number of SNCs portrayed in this chart represents the number of systems for which T&A expired during or prior to FY 1993, and therefore does not include TT SNCs, since T&A for TT SNCs expires in FY 1994.

Significant Noncompliance (cont.)

FY 1993 Regional Profile - NTNCWS Significant Noncompliers

The distribution of NTNCWSs that met the definition of SNC in FY 1993 is shown by Region in the chart below.

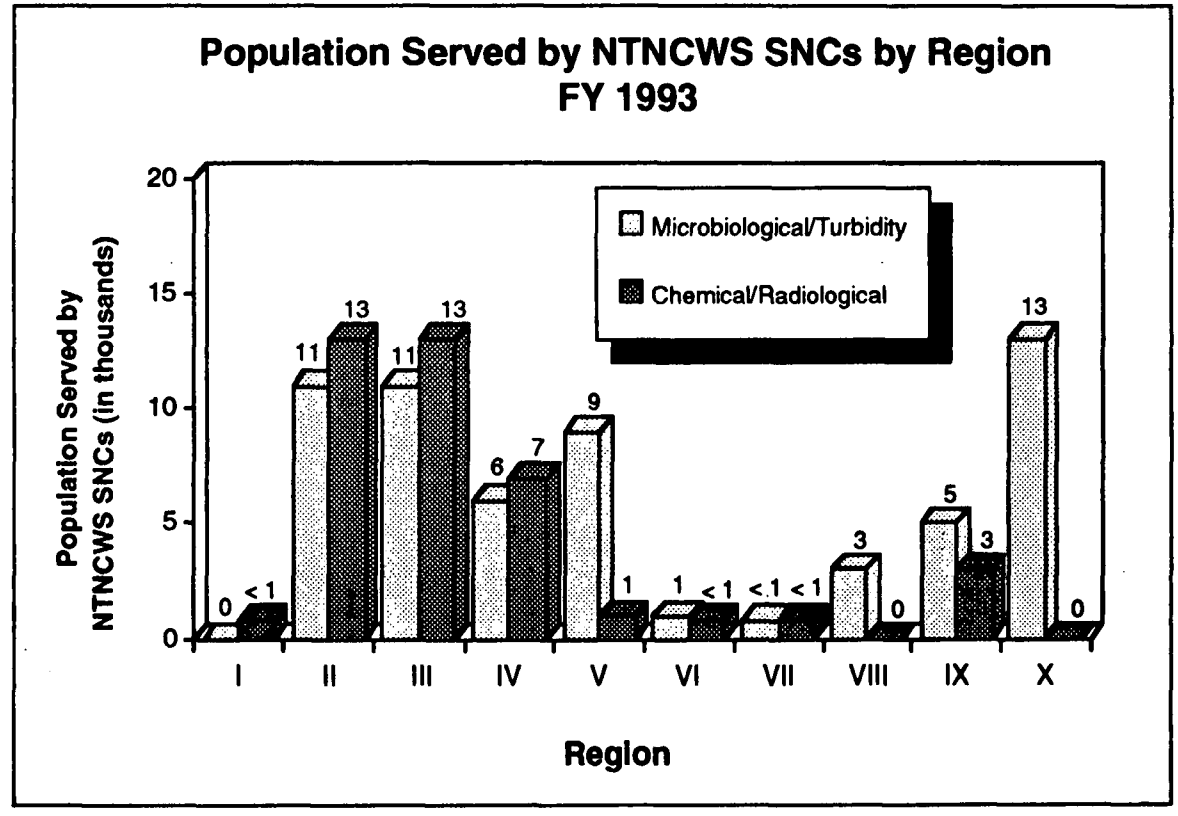


FRDS 07 (11/03/93).
Note: The number of SNCs portrayed in this chart represents the number of systems for which T&A expired during or prior to FY 1993, and therefore does not include TT SNCs, since T&A for TT SNCs expires in FY 1994.

Significant Noncompliance (cont.)

FY 1993 Regional Profile - NTNCWS Significant Noncompliers

The chart below displays population affected by NTNCWS SNCs in the ten EPA Regions in FY 1993.

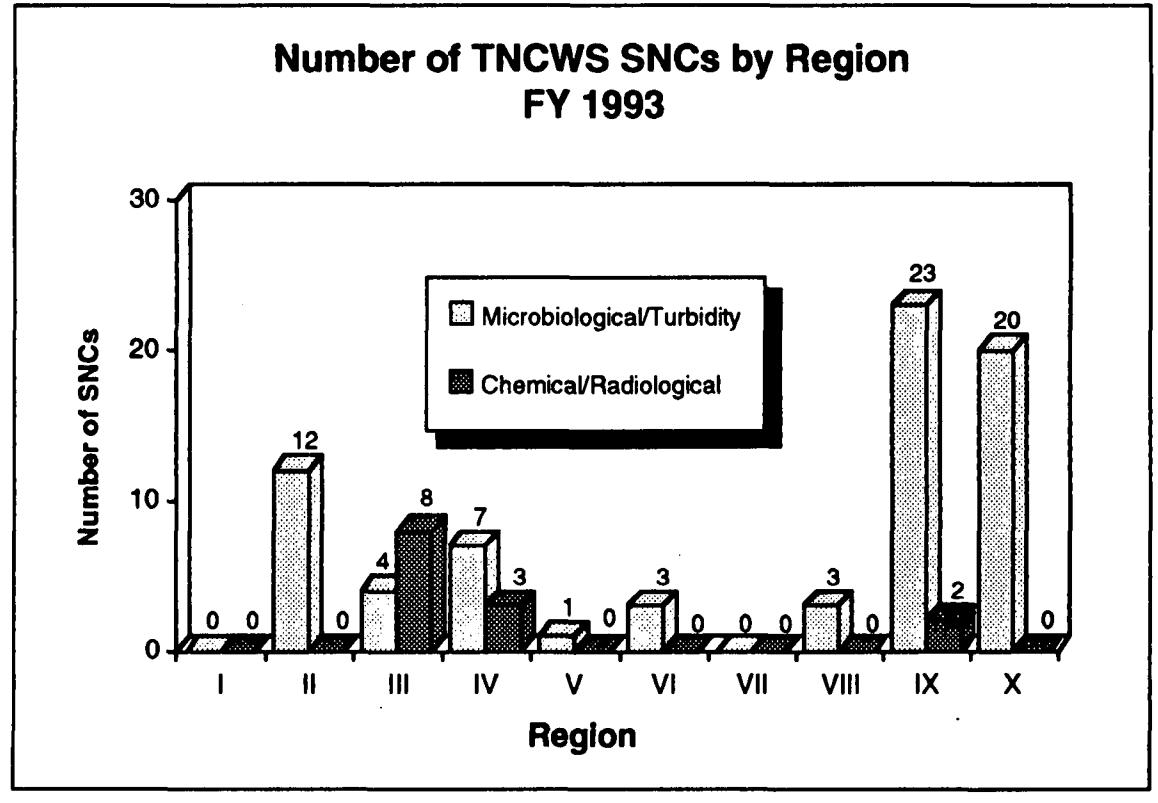


FRDS 07 (11/03/93).
Note: The number of SNCs portrayed in this chart represents the number of systems for which T&A expired during or prior to FY 1993, and therefore does not include TT SNCs, since T&A for TT SNCs expires in FY 1994.

Significant Noncompliance (cont.)

FY 1993 Regional Profile - TNCWS Significant Noncompliers

The distribution of TNCWSs that met the definition of SNC in FY 1993 is shown by Region in the chart below.



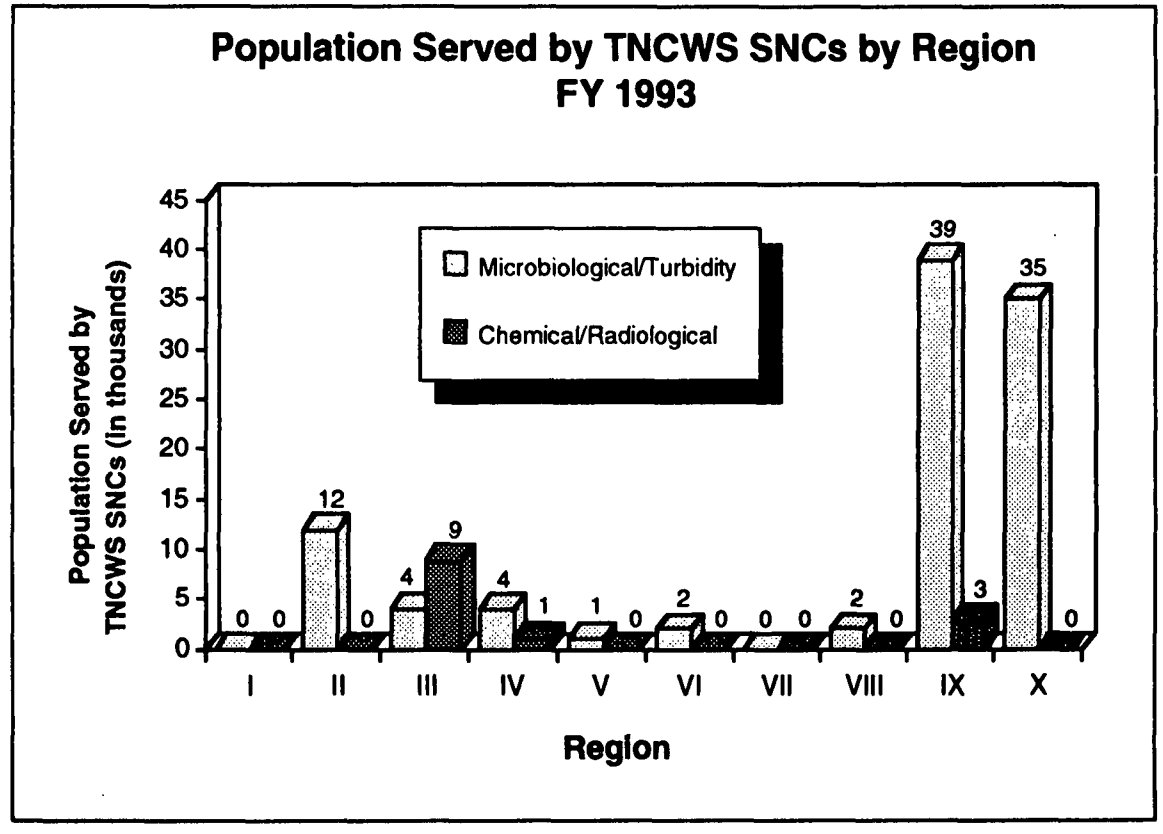
FRDS 07 (11/03/93).

Note: The number of SNCs portrayed in this chart represents the number of systems for which T&A expired during or prior to FY 1993, and therefore does not include TT SNCs, since T&A for TT SNCs expires in FY 1994.

Significant Noncompliance (cont.)

FY 1993 Regional Profile - TNCWS Significant Noncompliers

The chart below portrays the population served by TNCWS SNCs in the ten EPA Regions in FY 1993.



FRDS 07 (11/03/93).

Note: The number of SNCs portrayed in this chart represents the number of systems for which T&A expired during or prior to FY 1993, and therefore does not include TT SNCs, since T&A for TT SNCs expires in FY 1994.

Enforcement

Enforcement

The table on page 68 shows the distribution of State and Federal enforcement actions taken in FY 1993 against all violators of the drinking water regulations. EPA and the States use a variety of mechanisms to bring systems into compliance with drinking water regulations. Some of these methods are informal, such as telephone calls or warning letters, while others are formal enforcement tools such as administrative orders (AOs).

Since the 1986 amendments, EPA has been placing increased emphasis on formal enforcement at both the State and Federal levels. The data on State actions were derived from the number of unique enforcement actions that were reported to FRDS. Numbers for Federal actions were taken from monthly reports submitted to EPA Headquarters by the EPA Regional Offices.

The majority of State enforcement actions taken in FY 1993 were administrative orders (SAOs) (63 percent). Bilateral compliance agreements (BCAs) made up 24 percent of the State enforcement actions taken in FY 1993. Civil referrals (CRs) to State Attorneys General comprised 12 percent of State actions. Criminal cases filed (CFs) represented 1 percent of State actions. During FY 1993, the number of BCAs, SAOs, CRs, and CFs rose by 11 percent from FY 1992.

FY 1993 was a record-setting year for Federal enforcement activities. The number of new referrals (13) was more than double that of FY 1992 and represents an all-time record for the program. During FY 1993, the number of proposed administrative orders (PAOs), final administrative orders (FAOs), complaints for penalty (CFPs), §1431 emergency orders, and active cases rose by 11 percent from FY 1992.

The majority of Federal enforcement actions taken in FY 1993 were NOVs (58 percent). PAOs and FAOs made up 25 percent and 14 percent, respectively, of the Federal enforcement actions taken. CFPs and civil or criminal litigation comprised 2 percent of the Federal actions. Section 1431 emergency orders accounted for the remainder of the Federal actions.

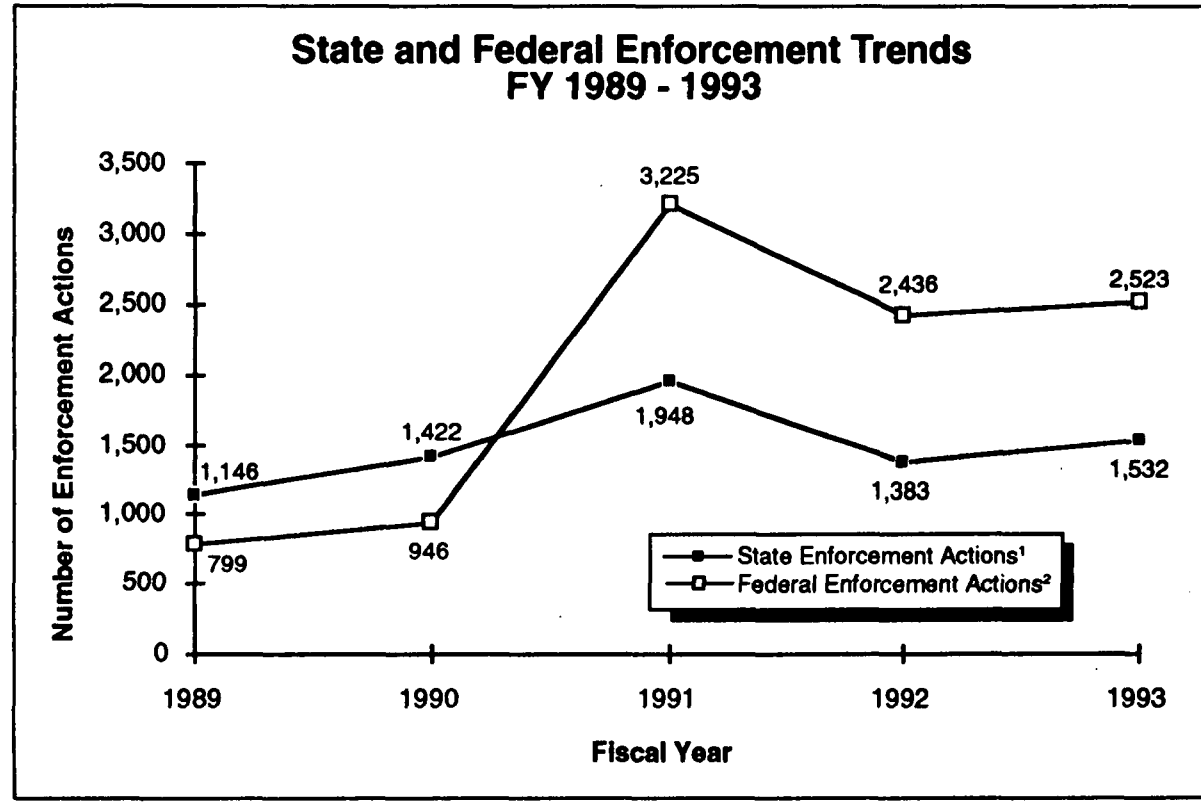
State & Federal Enforcement Actions: FY 1993

REGION	I	II	III	IV	V	VI	VII	VIII	IX	X	National Totals
Bilateral Compliance Agreements	38	9	31	68	18	42	50	0	15	104	375
Administrative Orders	135	359	99	100	24	142	34	2	15	58	968
Civil Referrals	8	2	0	47	2	117	4	1	1	0	182
Criminal Cases Filed	0	0	1	0	0	0	0	0	1	5	7
TOTAL STATE ACTIONS[1]	**181**	**370**	**131**	**215**	**44**	**301**	**88**	**3**	**32**	**167**	**1,532**
Notices of Violation	24	64	104	72	169	382	28	35	349	239	1,466
Proposed Administrative Orders	17	91	79	54	105	124	5	49	80	25	629
Final Administrative Orders	3	47	28	46	31	98	4	36	60	11	364
Complaints for Penalty	0	0	0	0	0	34	1	2	0	0	37
§1431 Emergency Orders	0	0	2	0	1	0	1	2	1	1	8
Active Cases[2]	4	1	1	2	1	5	1	3	0	1	19
TOTAL FEDERAL ACTIONS[3]	**48**	**203**	**214**	**174**	**307**	**643**	**40**	**127**	**490**	**277**	**2,523**

[1]Source: FRDS 17 (1/7/94).
[2]Active refers to any case that was referred, being litigated, or settled in FY 1993. Of the 19 active cases, all were civil cases (13 were new referrals and 6 were on-going cases).
[3]Source: PWSS Enforcement Activity Report for FY 1993.

Enforcement (cont.)

The graph below shows the total number of State and Federal actions from FY 1989 to FY 1993. The high number of Federal actions in FY 1991 was due to the large number of NOVs issued as part of special enforcement initiatives in several Regions. FY 1993 was a record year for the number of PAOs, FAOs, CFPs, and new civil referrals. During FY 1993, the number of both Federal and State actions increased by 11 percent from FY 1992.



¹State enforcement actions include bilateral compliance agreements, State administrative orders, civil referrals, and criminal cases filed.
²Federal enforcement actions include notices of violation, Federal proposed and final administrative orders, emergency orders, complaints for penalty, and active cases.

PWSS Compliance and Enforcement Program Direction

PWSS Compliance and Enforcement Program Direction

FY 1993

In FY 1993, EPA and the States took several actions to strengthen their enforcement programs. These initiatives included:

- **Increased emphasis on data quality**. Continued work to improve the accuracy and completeness of FRDS data, including data verifications in 9 States, review of data management practices as part of priority strategy audits in 7 States, and follow-up on data verifications conducted in FY 1991 and FY 1992.
- **Initiatives to enforce new regulations**, especially SWTR and LCR, including detailed tracking of systems that missed the June 29, 1993 SWTR deadline; many NOVs and AOs were issued to systems which failed to comply with the LCR M/R requirements.
- **Development and issuance of the Enforcement Management System (EMS)**. EMS guidance was signed in August 1993; Regions/States are to implement EMS in FY 1994 and FY 1995.
- **Increased emphasis on civil judicial actions.** The largest penalty of $65,000 was obtained against a PWS in FY 1993.
- **Focus on resolution of SNCs and Exceptions**.
- **Continued analyses on how to improve State programs.**

FY 1994 and Beyond

EPA and the States will continue to work on strengthening their programs in FY 1994 and beyond. Expected initiatives include:

- **Continued emphasis on major regulations.** **SWTR**: will enforce unfiltered systems that are required to filter, and ensure that filtered systems are complying with both M/R and TT requirements. **LCR**: will enforce initial M/R for medium/small systems and ensure that large and medium systems adhere to schedules for installing corrosion control.
- **Continued emphasis on addressing SNCs and Exceptions.**
- **State Program Oversight**. Data verifications and priority audits will continue to examine data quality and State implementation of enforcement strategies.
- **Implementation of EMS**.
- **Looking toward the reauthorized SDWA,** to provide EPA with streamlined processes for taking enforcement actions and some additional authorities.
- **Development of a formal inspection program.**

Appendix

List of Tables and Charts

List of Tables and Charts (cont.)

List of Tables and Charts (cont.)