State of North Carolina's Violation Tables for 2002

Contaminant Name	MCL (mg/l)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations
Organic Contaminants							
1,1,1-Tricholorethane (VOC)	0.2	0	0			329	212
1,1-Dichloroethylene (VOC)	0.007	0	0			329	212
1,1,2-Trichloroethane (VOC)	.005	0	0			329	212
1,2,4-Trichlorobenzene (VOC)	.07	0	0			329	212
1,2-Dibromo-3-chloropropane (DBCP) (SOC)	0.0002	0	0			250	161
1,2-Dichloroethane (VOC)	0.005	0	0			329	212
1,2-Dichloropropane (VOC)	0.005	0	0			329	212
2,3,7,8-TCDD (Dioxin) (SOC)	$3x10^{-8}$	State-wide waiver	State-wide waiver			State-wide waiver	State-wide waiver
2,4,5-TP (Silvex) (SOC)	0.05	0	0			250	161
2,4-D (SOC)	0.07	0	0			250	161
Acrylamide (SOC)				0	0		
Alachlor (SOC)	0.002	0	0			250	161
Atrazine (SOC)	0.003	0	0			250	161
Benzene (VOC)	0.005	0	0			329	212
Benzo(a)pyrene (SOC)	0.0002	0	0			250	161
Carbofuran (SOC)	0.04	0	0			250	161
Carbon tetrachloride (VOC)	0.005	0	0			329	212
Chlordane (SOC)	0.002	0	0			250	161
Cis-1,2-Dichloroethylene (VOC)	0.07	0	0			329	212
Dalapon (SOC)	0.2	0	0			250	161
Di(2-ethylhexyl)adipate (SOC)	0.4	0	0			250	161
Di(2-ethylhexyl)phthalate (SOC)	0.006	0	0			250	161

State of North Carolina's Violation Tables for 2002

Contaminant Name	MCL (mg/l)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations
Dichloromethane (VOC)	0.005	0	0			329	212
Dinoseb (SOC)	0.007	0	0			250	161
Diquat (SOC)	0.02	State-wide waiver	State-wide waiver			State-wide waiver	State-wide waiver
Endothall (SOC)	0.1	State-wide waiver	State-wide waiver			State-wide waiver	State-wide waiver
Endrin (SOC)	0.002	0	0			250	161
Epichlorohydrin (SOC)				0	0		
Ethylbenzene (VOC)	0.7	0	0			329	212
Ethylene dibromide (EDB) (SOC)	0.00005	3	2			250	161
Glyphosate (SOC)	0.7	State-wide waiver	State-wide waiver			State-wide waiver	State-wide waiver
Heptachlor (SOC)	0.0004	0	0			250	161
Heptachlor epoxide (SOC)	0.0002	0	0			250	161
Hexachlorobenzene (SOC)	0.001	0	0			250	161
Hexachlorocyclopentadiene (SOC)	0.05	0	0			250	161
Lindane (SOC)	0.0002	0	0			250	161
Methoxychlor (SOC)	0.04	0	0			250	161
Monochlorobenzene (VOC)	0.1	0	0			329	212
o-Dichlorobenzene (VOC)	0.6	0	0			329	212
para-Dichlorobenzene (VOC)	0.075	0	0			329	212
Total polychlorinated biphenyls (PCBs) (SOC)	0.0005	0	0			250	161
Pentachlorophenol (SOC)	0.001	0	0			250	161
Tetrachloroethylene (VOC)	0.005	0	0			329	212
Trichloroethylene (VOC)	0.005	0	0			329	212
Styrene (VOC)	0.1	0	0			329	212
Toluene (VOC)	1	0	0			329	212

State of North Carolina's Violation Tables for 2002

Contaminant Name	MCL (mg/l)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations
Trans-1,2-Dichloroethylene (VOC)	0.1	0	0			329	212
Xylenes (total) (VOC)	10	0	0			329	212
Toxaphene (SOC)	0.003	0	0			250	161
Oxamyl (Vydate) (SOC)	0.2	0	0			250	161
Pichloram (SOC)	0.5	0	0			250	161
Simazine (SOC)	0.004	0	0			250	161
Vinyl chloride (VOC)	0.002	0	0			329	21
SUBTOTAL		3	2			13409	8638

Contaminant Name	MCL (mg/l)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations
Inorganic Contaminants							
Antimony	0.006	1	1			210	180
Arsenic	0.01**	8	6			212	180
Asbestos	7 million fibers/L# 10 Φm long	0	0			0	0
Barium	2	0	0			210	180
Beryllium	0.004	0	0			210	180
Cadmium	0.005	1	1			210	180
Chrominum	0.1	0	0			211	180
Cyanide (as free cyanide)	0.2	0	0			210	180
Fluoride	4.0	0	0			210	180
Mercury	0.002	2	1			211	180
Nitrate	10 (as Nitrogen)	70	42			1247	1211

State of North Carolina's Violation Tables for 2002

Contaminant Name	MCL (mg/l)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations
Nitrite	1 (as Nitrogen)	0	0			560	551
Selenium	0.05	0	0			210	180
Thallium	0.002	4	2			211	180
Total nitrate and nitrite	10 (as Nitrogen)	0	0			0	0
SUBTOTAL		86	53			4122	3742

Contaminant Name	MCL (mg/l)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations
Radionuclides							
Gross alpha	15 pCi/L	14	9			107	89
Radium-226 and readium-228	5 pCi/L	23	10			23	17
Gross beta	4 mrem/yr	0	0			0	0
SUBTOTAL		37	19			130	106

Contaminant Name	MCL (mg/l)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations
Total Coliform Rule							
Acute MCL Violation	Presence	20	19				
Non-acute MCL violation	Presence	469	388				
Major routine and follow-up monitoring						5309	2611
Sanitary survey[2]						0	0
SUBTOTAL		489	407			5309	2611

State of North Carolina's Violation Tables for 2002

Contaminant Name	MCL (mg/l)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations
Surface Water Treatment Rule (SWTR)							
Filtered systems							
Monitoirng, routine/repeat						0	0
Treatment techniques				0	0		
Unfiltered systems							
Monitoring routine/repeat						0	0
Failure to filter				0	0		
Interim Enhanced Surface Water Treatment Rule (IESWTR)							
Monitoirng, routine/repeat						6	3
Treatment techniques				6	3		
SUBTOTAL				6	3	6	3

Contaminant Name	MCL (mg/l)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations
Lead and Copper Rule							
Initial lead and copper tap M/R						88	69
Follow-up or routine lead and copper tap M/R						74	65
Treatment installation				0	0		
Public Education				22	22		
SUBTOTAL				22	22	162	134

State of North Carolina's Violation Tables for 2002

Contaminant Name	MCL (mg/l)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations
Stage 1 Disinfectants and Disinfection Byproducts Rule (Stage 1 DBPR)							
Monitoring, routine						51	18
Total Haloacetic Acids	0.060	9	9			9	9
Total Trihalomethanes	0.08	69	35			12	10
Treatment technique				0	0		
SUBTOTAL		78	44			72	37

Contaminant Name	MCL (mg/l)[1]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations	Number of Violations	Number of Systems with Violations
Consumer Confidence Report (CCR)							
Complete Failure to Report						992 (886 Returned to Compliance)	992 (886 Returned to Compliance)
Public Notices (PN)							
Complete Failure to Report						3310	2052
SUBTOTAL						4302	3044

1 Values are in milligrams per liter (mg/L), unless otherwise specified.
2 Number of major monitoring violations for sanitary survey under the Total Coliform Rule.

North Carolina's Annual State PWS Report
For the CalendarYear 2002

Attached is the Violations Table for North Carolina and this table is based largely on data retrieved from the state's version of the SDWIS. The SDWIS/FED was used for comparative purposes only.

At the end of 2002, North Carolina had 2,243 active community systems, 4,644 active transient non-community systems, 614 active non-transient non-community systems, 91 active 'adjacent' systems (State defined), 178 active 'campground' systems (State defined), and 236 active 'sub-metered apartments' systems (State defined) which is a total of 8,006 active public water systems (Federal and State).

For the calendar year of 2002 or for compliance periods which covered any part of 2002, North Carolina had 13,279 violations. These violations were acquired by 4,791 water systems. Of these 4,791 water systems, 338water systems have become "inactive" since the beginning of 2002.

State of North Carolina's Violation Tables for 2002

Of these 4,791 water systems:
45% had 1 violation (133 water systems have become "inactive");
18% had 2 violations (64 water systems have become "inactive");
11% had 3 violations (50 water systems have become "inactive");
8% had 4 violations (33 water systems have become "inactive"); and
18% had 5 or more violations (58 water systems have become "inactive").

Of these 13,279 violations:
224 were MCL violations (2%) with the other 13,055 being monitoring/reporting violations (98%). And the majority of North Carolina's monitoring/reporting violations are produced because of analysis reporting forms are not received on time, or the reporting forms are not filled in correctly by the sample collector, or the "location codes" for the sampling points are not correct so the correct sampling points cannot receive proper credit.

Of the 224 MCL violations:
these are from 126 water systems (2 have become "inactive"). This makes 1.5% of North Carolina's public water systems having a water quality issue.

North Carolina's field staff performed 2,409 inspections. There were 6,164 other on-sites visits/reasons which were performed as well. These reasons are "sample collection", "technical assistance", "investigations of complaints or violations", "emergency assistance", and/or "engineering determination/advice". Some of these 6,164 "reasons" were performed at the same time as the 'inspection".

**North Carolina lowered the Arsenic Maximum Contaminant Level to 0.01ppm in the year 2002.

North Carolina allows variances and exemptions, but none were issued in 2002.

North Carolina has some State-wide waivers for certain contaminants.

North Carolina requires all 48 unregulated contaminants under the old section 141.40 to be tested along with the regulated contaminants. The number of violations and systems in violation for the unregulated contaminants for 2002 are the same as the regulated contaminants listed in the table.

North Carolina's State Report is available by contacting the EPA's Safe Drinking Water Hotline at 1-800-426-4791 or by calling the North Carolina Public Water Supply Section at 919-715-3243 or emailing a request to Martha.Fillinger@ncmail.net or going to the Public Water Supply Section's homepage at www.deh.enr.state.nc.us/pws. For an Excel file of the public water systems in violation that were used for this report, please call 919-715-3243 or email Martha.Fillinger@ncmail.net. (The file is too large to print out and mail.)

Definitions for Violation Table

The following definitions apply to the Summary of Violations table.

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:

State of North Carolina's Violation Tables for 2002

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, which is to be submitted to EPA by January 1, 1998, is from July 1, 1996 through June 30, 1997. This interval will change for future annual reports. See guidance language for these intervals.

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:

State of North Carolina's Violation Tables for 2002

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.