STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

DIVISION OF UNDERGROUND STORAGE TANKS

TECHNICAL GUIDANCE DOCUMENT - 002

EFFECTIVE DATE - AUGUST 28, 1991
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REVISED - APRIL 29, 1996

RE: DIVISION OF WATER SUPPLY'S PRIMARY AND SECONDARY DRINKING WATER STANDARDS

Division Rule 1200-1-15-.01(3)(p) defines "Drinking water supply" as:

> "Any aquifer or water source whose chemical characteristics meet the primary and secondary drinking water standards as defined under rule 1200-5-1 and provides a yield of at least one-half gallon per minute. This shall also include any water supply used for drinking by citizens of the state."

The procedures outlined in Section II L. of the Environmental Assessment Guidelines shall be followed when determining if the ground water at a site meets the above referenced definition.

TENNESSEE DIVISION OF WATER SUPPLY
MAXIMUM CONTAMINANT LEVELS
RULE 1200-5-1-.06, 12, AND 25

A. Primary Standards

1) Inorganic Chemicals

	LEVEL, PPM
Antimony	0.006
Arsenic	0.05
Asbestos (Fibers)	7.0
Beryllium	0.004
Barium	2.0
Cadmium	0.005
Chromium	0.1
Cyanide (as free cyanide)	0.2
Fluoride	4.0
Lead	0.05
Mercury	0.002
Nitrate (as nitrogen)	10.0
Nitrite (as nitrogen)	1.0
Total Nitrate and Nitrite (as nitrogen)	10.0
Selenium	0.05
Thallium	0.002

2) Organic Chemicals LEVEL, PPM

Alachlor	0.002
Atrazine	0.003
Carbofuran	0.04
Chlordane	0.002
Dibromodichloropropane	0.0002
2,4, Dichlorophenoxyacetric acid	0.07
Ethylene dibromide	0.00005
Heptachlor	0.0004
Heptachlor epoxide	0.0002
Lindane	0.0002
Methoxychlor	0.04
Polychlorinated biphenyls	0.0005
Toxaphene	0.003
2,4,5 Trichlorophenoxyproprionic acid	0.05
Pentachlorophenol	0.001
Benzo(a)pyrene	0.0002
Dalapon	0.2
Di(2-ethylhexl) adipate	0.4
Di(2-ethylhexl)phthate	0.006
Dinoseb	0.007
Diquat	0.02
Endothall	0.1
Glyphosate	0.7
Hexachlorobenzene	0.001
Hexachlorocyclopentadiene	0.05
Oxamyl (Vydate)	0.2
Picloram	0.5
Simazine	0.004
2,3,7,8-TCDD (Dioxin)	0.00000003
Endrin	0.002

3) Turbidity

The maximum contaminant levels for turbidity in drinking water measured at a representative entry point(s) to the distribution system, are:

a) one (1.0) turbidity unit, as determined by a monthly average pursuant to Regulation 1200-5-1-.08.

b) two (2.0) turbidity units based on an average for two consecutive days pursuant to Regulation 1200-5-1-.08.

4) Microbiological

The maximum contaminant levels for microbiological are applicable to both community water systems and non-community water systems.

a) The maximum contaminant level (MCL) is based on the presence or absence of total coliforms in a sample, rather than coliform density.

The number of total coliform positive samples shall not exceed any of the following:

1. For a system which collects at least 40 samples per month, if no more than 5.0 percent of the samples collected during a month are total coliform-positive, the system is in compliance with the MCL for total coliforms.

2. For a system which collects fewer than 40 samples/month, if no more than one sample collected during a month is total coliform-positive, the system is in compliance with the MCL for total coliforms.

3. A public water system which has exceeded the MCL for total coliforms must report the violation to the State no later than the end of the next business day after it learns of the violation and notify the public in accordance with the schedule of 1200-5-1-.19(1) using the language specified in 1200-5-.19(1)(i).

4. A public water system which has failed to comply with the coliform monitoring requirements, including a sanitary survey requirement must report the monitoring violation to the State within ten (10) days after the system discovers the violation and notify the public in accordance with 1200-5-1-.19(1).

b) Any fecal coliform-positive repeat sample or E. coli-positive repeat sample, or any total coliform-positive repeat sample following a fecal coliform-positive or E. coli-positive routine sample constitutes a violation of the MCL for total coliforms. For purposes of the public notification requirements in [1200-5-1-.19(1)(a)3.] this is a violation that may pose an acute risk to health, and the language specified by 1200-5-1-.19(5)(j) must be used.

c) Fecal coliforms/Escherichia coli (E. coli) testing

1. If any routine or repeat sample is total coliform-positive, the system must analyze that total coliform-positive culture medium to determine if fecal coliforms are present, except that the system may test for E. coli in lieu of fecal coliforms. If fecal coliforms or E. coli are present, the system must notify the State by the end of the day when the system is notified of the test results, unless the system is notified of the result after the Department office is closed, in which case the system must notify the State before the end of the next business day.

2. The State has the discretion to allow a public water system, on a case-by-case basis, to forgo fecal coliform or E. coli testing on a total coliform-positive sample if that system assumes that the total coliform-positive sample is fecal coliform-positive or E. coli-positive. Accordingly, the system must notify the State

as specified in paragraph (c)(1) of this section and the provisions of 1200-5-1-.06(4)(b) apply.

d) A public water system must determine compliance with the MCL for total coliforms in (a) and (b) of this section for each month in which it is required to monitor for total coliforms.

e) No variance or exemptions from the maximum contaminant level for total coliforms are permitted.

5) Radionuclides

a) The following maximum contaminant levels for radium-226, radium-228, and gross alpha particle radioactivity are applicable to all community water systems:

1. Combined radium-226 and radium-228: -5 pCi/l.

2 Gross alpha particle activity (including radium-226 but excluding radon and uranium): -15 pCi/l.

b) Maximum contaminant levels for beta particles and photon radioactivity from man-made radionuclides in community water systems shall be as follows:

1. The average annual concentrations of beta particle and photon radioactivity from man-made radionuclides in drinking water shall not produce an annual dose equivalent to the total body or any internal organ greater than four (4) millirem/year.

2. Except for radionuclides listed in Table A, the concentration of man-made radionuclides causing four (4) mrem total body or organ dose equivalents shall be calculated on the basis of a two (2) liter per day drinking water intake using the 168 hour data listed in "Maximum Permissible Body Burdens and Maximum Water for Occupational Exposure," NBS Handbook 69 as amended August 1963, U.S. Department of Commerce. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed four (4) millirem/year.

TABLE A
Average Annual Concentrations
Assumed to Produce a Total Body
or Organ Dose of a 4 mrem/yr.

Radionuclide	Critical Organ	pCi per Liter
Tritium	Total Body	20,000
Strolntium-90	Bone Marrow	8

B. Secondary Standards	Level, PPM
Chloride	250
Color (In Color Units)	15
Copper	1
MBAS (Methyl Blue Active Substance)	0.5
Iron	0.3
Manganese	0.05
Odor (In Threshold Odor Number)	3
pH	6.5-8.5
Sulfate	250
TDS (Total Dissolved Solids)	500
Zinc	5
Fluoride	2.0
Aluminum	0.2
Silver	0.1

Volatile Organic Chemicals	Level, PPM
Trichloroethylene	0.005
Carbon tetrachloride	0.005
Vinyl chloride	0.002
1,2-Dichloroethane	0.005
Benzene	0.005
1,1-Dichloroethylene	0.007
1,1,1-Trichloroethane	0.20
para-Dichlorobenzene	0.075
cis 1,2-Dichloroethylene	0.07
1,2-Dichloropropane	0.005
Ethyl benzene	0.7
Monochlorobenzene	0.1
ortho-Dichlorobenzene	0.6
Styrene	0.1
Tetrachloroethylene	0.005
Toluene	1
trans 1,2-Dichloroethylene	0.1
Xylenes (total)	10
Dichloromethane	0.005
1,2,4-Trichlorobenzene	0.07
1,1,2-Trichloroethane	0.005