



State of Wisconsin

DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

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CR 88-115

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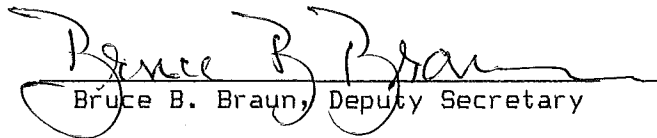
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STATE OF WISCONSIN)
)
DEPARTMENT OF NATURAL RESOURCES)

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, Bruce B. Braun, Deputy Secretary of the Department of Natural Resources and custodian of the official records of said Department, do hereby certify that the annexed copy of Natural Resources Board Order No. WS-30-88 was duly approved and adopted by this Department on January 26, 1989. I further certify that said copy has been compared by me with the original on file in this Department and that the same is a true copy thereof, and of the whole of such original.

IN TESTIMONY WHEREOF, I have here-
unto set my hand and affixed the
official seal of the Department at
the Natural Resources Building in
the City of Madison, this 5th
day of May, 1989.


Bruce B. Braun, Deputy Secretary

(SEAL)

9-1-89

ORDER OF THE STATE OF WISCONSIN NATURAL RESOURCES BOARD
REPEALING, RENUMBERING, AMENDING, REPEALING & RECREATING,
AND CREATING RULES

.....
IN THE MATTER OF repealing ss. NR 109.20(3),
109.40(intro) note, 109.61(3) note, and 109.74(1)
note & (2) note; renumbering ss. NR 109.04(1) to
(18), 109.22 and 149.23 to 149.27; amending
ss. NR 109.04(10) & (12), 109.11(1) & (2), 109.12(3)
to (5), 109.20(title) & (intro.), 109.21(title),
(3) & (5), 109.23(4), 109.30(intro.) & (4),
109.31(5)(a), (b)(intro.) & 2., (c), (9) note & (10),
109.53(1)(c), 109.60(2), 109.72(1), 109.80(3),
149.11(5) and 149.25(3)(i); repealing and
recreating ss. NR 109.81, ch. NR 109
Part V, 149.03(5)(b) and NR 149 Table 1; and creating
ss. NR 109.04(1), (10), (12), (16) & (17), 109.09,
109.10, 109.12(2)(d) & (e), (7), 109.13, 109.22,
109.24 to 109.26, 109.60(4) and
149.23 of the Wisconsin Administrative Code
pertaining to safe drinking water
.....

WS-30-88

Analysis Prepared by Department of Natural Resources

Statutory authority: ss. 144.025(2)(t) and 162.01(1), Stats.
Statutes interpreted: chs. 144 and 162, Stats.

The major changes in this revision parallel recent changes in federal drinking water regulations under the Safe Drinking Water Act, and are required as an ongoing condition of the department's primacy agreement with the U.S. Environmental Protection Agency. Principal changes include revised or new drinking water standards, called "maximum contaminant levels", and monitoring requirements for fluoride and eight volatile organic chemicals, and revised public notification requirements.

Minor clean up of text has occurred in a number of sections.

In addition, ch. NR 149 is being revised to incorporate the required analytical methods for the eight volatile organic chemicals.

SECTION 1. NR 109.04(1) to (18) are renumbered 109.04(2), to (9), (11), (13) to (15), (18) to (23) respectively, and 109.04(9) and (11) as renumbered are amended to read:

NR 109.04(9) "Maximum contaminant level" or "MCL" means the maximum permissible level of a contaminant in water which is delivered to the consumer service outlet of the ultimate user of a public water system, except in the case of turbidity where the maximum permissible level is measured at the point of entry to the distribution system. Contaminants added to the water under circumstances controlled by the user, except those resulting from corrosion of piping and plumbing caused by water quality, are excluded from this definition.

(11) "Non-community water system" means a public water system that ~~is not a community water system. A non-community water system typically serves a transient population rather than permanent year round residents~~ serves fewer than 25 year-round residents.

Note: Examples of non-community water systems include those serving schools, motels, restaurants, churches, campgrounds and parks.

SECTION 2. NR 109.04(1), (10), (12), (16) and (17) are created to read:

NR 109.04 (1) "Best available technology" or "BAT" means the best technology, treatment techniques, or other means which the U.S. environmental protection agency finds, after examination for efficacy under field conditions

and not solely under laboratory conditions, are available, taking cost into consideration.

(10) "Maximum contaminant level goal" or "MCLG" means the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety. Maximum contaminant level goals are non-enforceable health goals.

(12) "Non-transient non-community water system" means a non-community water system that regularly serves at least 25 of the same persons over 6 months per year.

(16) "Point-of-entry treatment device" is a water treatment device applied to the drinking water entering a house or building for the purpose of reducing contaminants in the drinking water distributed throughout the house or building.

(17) "Point-of-use treatment device" is a water treatment device applied to a single tap used for the purpose of reducing contaminants in drinking water at that one tap.

SECTION 3. NR 109.09 and 109.10 are created to read:

NR 109.09 MAXIMUM CONTAMINANT LEVEL GOALS FOR PRIMARY CONTAMINANTS. (1)

Maximum contaminant level goals (MCLGs) are zero for the following contaminants:

Benzene
Carbon tetrachloride
1,2-dichloroethane
Trichloroethylene
Vinyl chloride

(2) MCLGs for the following contaminants are as indicated:

<u>Contaminant</u>	<u>MCLG in mg/l</u>
1,1-Dichloroethylene	0.007
1,1,1-Trichloroethane	0.20
para-Dichloroebenzene	0.075

NR 109.10 APPLICABILITY OF PRIMARY MAXIMUM CONTAMINANT LEVELS TO NEW OR RECONSTRUCTED WATER SOURCES. No new or reconstructed water source exceeding any primary maximum contaminant level in this chapter may be connected to a public water system unless blending or treatment is provided such that the primary maximum contaminant level is not exceeded upon entry to the distribution system.

SECTION 4. NR 109.11(1) and (2) are amended to read:

NR 109.11 MAXIMUM CONTAMINANT LEVELS FOR INORGANIC CHEMICALS. (1) The maximum contaminant level for nitrate is applicable to both community water systems and non-community water systems, except as provided in sub. (3). The maximum contaminant levels for the other inorganic chemicals apply only to community water systems. Compliance with maximum contaminant levels for inorganic chemicals is calculated under s. NR 109.12.

(2) The following are the maximum contaminant levels for inorganic chemicals:

Contaminant	Level, milligrams per liter (micrograms per liter in parentheses)
Arsenic	0.05 (50 ug/l)
Barium	1. (1000 ug/l)
Cadmium	0.010 (10 ug/l)

Chromium	0.05	(50 ug/l)
Fluoride	2.2	4.0
Lead	0.05	(50 ug/l)
Mercury	0.002	(2 ug/l)
Nitrate (as N)	10.	
Selenium	0.01	(10 ug/l)
Silver	0.05	(50 ug/l)

SECTION 5. NR 109.12(2)(d) and (e) are created to read:

NR 109.12(2)(d) In addition to complying with pars. (a) and (b), suppliers of water monitoring for natural fluoride shall sample each entry point to the distribution system. If water from more than one source is combined before entry to the distribution system, the entry point shall be sampled during periods representative of the maximum natural fluoride levels occurring under normal operating conditions.

(e)1. The department may decrease the frequencies for natural fluoride monitoring if the department determines that the system is unlikely to exceed the MCL, considering the following factors:

- a. Reported concentrations from previously required monitoring,
- b. The degree of variation in reported concentrations, and
- c. Other factors which may affect natural fluoride concentrations such as changes in pumping rates in groundwater supplies or significant changes in the system's configuration, operating procedures, source of water, and changes in stream flows.

2. In no case may monitoring be reduced to less than one sample every 10 years. For systems monitoring once every 10 years, the department shall review the monitoring frequency every 10 years to determine whether more frequent monitoring is necessary.

SECTION 6. NR 109.12(3) to (5) are amended to read:

NR 109.12(3) If the result of an analysis made under sub. ~~(1)~~(2) indicates that the level of any contaminant listed in s. NR 109.11 exceeds the maximum contaminant level, the supplier of water shall report to the department within 7 days and initiate 3 additional analyses at the same sampling point within one month.

(4) When the average of 4 analyses made under sub. (3), rounded to the same number of significant figures as the maximum contaminant level for the substance in question, exceeds the maximum contaminant level, the supplier of water shall notify the department under s. NR 109.80 and give notice to the public under s. NR 109.81. Monitoring after the maximum contaminant level is exceeded shall be at a frequency designated by the department and shall continue until the maximum contaminant level has not been exceeded in 2 successive samples ~~(special monitoring thereafter shall be at a frequency designated by the department)~~, collected 30 to 60 days apart, or until a monitoring

schedule as a condition to a variance under s. NR 109.91, ~~exemption~~ conditional waiver under s. NR 109.90 or enforcement action shall become effective. Special monitoring thereafter shall be at a frequency designated by the department.

(5) The provisions of subs. (3) and (4) notwithstanding, compliance with the maximum contaminant level for nitrate as nitrogen shall be determined on the basis of the mean of 2 analyses. When a level exceeding the maximum contaminant level for nitrate as nitrogen is found, a second analysis shall be initiated within 24 hours, and if the average of the 2 analyses exceeds the maximum contaminant level the supplier of water shall report findings to the department under s. NR 109.80 and shall notify the public under s. NR 109.81.

SECTION 7. NR 109.12(7) is created to read:

NR 109.12 (7) Analysis for fluoride under this section may only be conducted by laboratories that have analyzed performance evaluation samples provided by U.S. EPA environmental monitoring and support laboratory to within plus or minus 10% of the reference value at fluoride concentrations from 1.0 mg/l to 10.0 mg/l within the past 12 months.

SECTION 8. A note following s. NR 109.13 is created to read:

Note: A primary maximum contaminant level has not been established for sodium.

SECTION 9. NR 109.20(title) and (intro.) are amended to read:

NR 109.20 MAXIMUM CONTAMINANT LEVELS FOR NONVOLATILE ORGANOCHLORINE

PESTICIDES AND CHLOROPHENOXY ACID HERBICIDES. The following are the maximum contaminant levels for ~~organic chemicals~~ nonvolatile organochlorine pesticides and chlorophenoxy acid herbicides. They apply only to community water systems. Compliance with maximum contaminant levels for these organic chemicals shall be calculated pursuant to s. NR 109.21.

SECTION 10. NR 109.20(3) is repealed.

SECTION 11. NR 109.21(title), (3) and (5) are amended to read:

NR 109.21 NONVOLATILE ORGANOCHLORINE PESTICIDES AND CHLOROPHENOXY ACID HERBICIDES--SAMPLING AND ANALYTICAL REQUIREMENTS.

(3) When the average of 4 analyses made under sub. (2), rounded to the same number of significant figures as the maximum contaminant level for the substance in question, exceeds the maximum contaminant level, the supplier of water shall report to the department under s. NR 109.80 and give notice to the public under s. NR 109.81. Monitoring after the maximum contaminant level is exceeded shall be at a frequency designated by the department and shall continue until the maximum contaminant level has not been exceeded in 2 successive samples (special monitoring thereafter shall be at a frequency designated by the department) or until a monitoring schedule as a condition to a variance under s. NR 109.91, exemption conditional waiver under s. NR 109.90 or enforcement action shall become effective.

(5) Analysis made to determine compliance with s. NR 109.20 (2) shall be conducted in accordance with "Methods for Organochlorine Pesticides and Chlorophenoxy Acid Herbicides in Drinking Water and Raw Source Water,"

available from ORD Publications, CERI, EPA, Cincinnati, Ohio 45268; or "Chlorinated Phenoxy Acid Herbicides in Water," Annual Book of ASTM Standards, part 31, Method D-3478-79; or Method 509-B, pp. 565-569 in "Standard Methods for the Examination of Water and Wastewater," 14th Edition; or "Gas Chromatographic Methods for Analysis of Organic Substances in Water," USGS, Book 5, Chapter A-3, pp. 24-39. Copies of these publications are available for inspection at the office of the department of natural resources, the secretary of state's office and the office of the revisor ~~or~~ of statutes, and may be obtained for personal use from the U.S. environmental protection agency, Washington, DC 20460.

SECTION 12. NR 109.22 is renumbered NR 109.23 and NR 109.23(4) as renumbered is amended to read:

NR 109.23(4) Compliance with s. NR ~~109.20(3)~~ 109.22 shall be determined based on a running annual average of quarterly samples collected by the system as prescribed in sub. (2) (a) or (b). If the average of samples covering any 12 month period exceeds the maximum contaminant level, the supplier of water shall report to the department under s. NR 109.80 and notify the public under s. NR 109.81. Monitoring after the maximum contaminant level is exceeded shall be at a frequency designated by the department and shall continue until a monitoring schedule as a condition to a variance under s. NR 109.91, ~~exemption conditional waiver under s. NR 109.90~~ or enforcement action becomes effective.

SECTION 13. NR 109.22 is created to read:

NR 109.22 MAXIMUM CONTAMINANT LEVEL FOR TOTAL TRIHALOMETHANES. The maximum contaminant level for total trihalomethanes (the sum of the concentrations of bromodichloromethane, dibromochloromethane, tribromomethane (bromoform), and trichloromethane (chloroform)) shall be 0.1 milligrams per liter. This maximum contaminant level applies to community water systems which add a disinfectant (oxidant) to the water in any part of the drinking water treatment process. Compliance with the maximum contaminant level for total trihalomethanes shall be calculated pursuant to s. NR 109.23.

SECTION 14. NR 109.24 to 109.26 are created to read:

NR 109.24 MAXIMUM CONTAMINANT LEVELS FOR VOLATILE ORGANIC CONTAMINANTS.

(1) The following maximum contaminant levels for volatile organic contaminants apply to community water systems and non-transient non-community water systems.

<u>Contaminant</u>	<u>Maximum contaminant level in mg/l</u>
Benzene	0.005
Vinyl chloride	0.0002
Carbon tetrachloride	0.005
1,2-Dichloroethane	0.005
Trichloroethylene	0.005
1,1-Dichloroethylene	0.007
1,1,1-Trichloroethane	0.20
para-Dichlorobenzene	0.075

(2) The following are the BATs available for achieving compliance with the maximum contaminant level for the volatile organic chemicals listed in sub. (1):

- (a) Central treatment using packed tower aeration, and
- (b) Central treatment using granular activated carbon, except for vinyl chloride.

NR 109.25 VOLATILE ORGANIC CONTAMINANTS--SAMPLING AND ANALYTICAL REQUIREMENTS. Analysis of the contaminants listed in s. NR 109.24 for purposes of determining compliance with the maximum contaminant levels shall be conducted as follows:

(1)(a) Suppliers of water having groundwater systems shall sample at points of entry to the distribution system representative of each well. Sampling shall be conducted at the same location or a more representative location each quarter. Each entry point to the distribution system shall be sampled every 3 months except as provided in sub. (7)(a).

(b) To ensure that average contaminant levels are not understated for entry points which have shown variable contaminant levels, the supplier of water shall sample such entry points to represent the highest contaminant levels which occur under normal (non-emergency) operating conditions. Exceptions to this may be approved by the department on a case-by-case basis if the supplier of water adequately demonstrates that another monitoring program is more representative of average contaminant levels at that entry point.

(2) Suppliers of water having surface water systems shall sample at points in the distribution system representative of each source or at entry points to the distribution system after any application of treatment. Sampling shall be conducted at the same location or a more representative location each quarter. Each source shall be sampled every 3 months except as provided in sub. (7)(b).

(3) If the system draws water from more than one source and sources are

combined before distribution, the supplier of water shall sample at an entry point to the distribution system during periods of normal operating conditions.

(4) All suppliers of water having community water systems or non-transient non-community water systems serving more than 10,000 individuals shall analyze all distribution or entry-point samples representing all source waters beginning no later than January 1, 1988. All suppliers of water having community water systems or non-transient non-community water systems serving from 3,300 to 10,000 individuals shall analyze all distribution or entry-point samples, as required in this section, representing all source waters beginning no later than January 1, 1989. Suppliers of water having community and non-transient non-community water systems serving less than 3,300 individuals shall analyze all distribution or entry-point samples, as required in this section, representing all source waters beginning no later than January 1, 1991.

(5) The department may require confirmation samples for any positive or negative results. The department may delete results of sampling errors from any compliance calculation.

(6) Analysis for vinyl chloride is required only for groundwater systems that have detected one or more of the following 2-carbon organic compounds: Trichloroethylene, tetrachloroethylene, 1,2-dichloroethane, 1,1,1-trichloroethane, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, or 1,1-dichloroethylene. The analysis for vinyl chloride is required at each distribution or entry point at which one or more of the 2-carbon organic compounds were found. If the first analysis does not detect vinyl chloride,

the department may reduce the frequency of vinyl chloride monitoring to once every 3 years for that sample location or other sample locations which are more representative of the same source. Suppliers of water having surface water systems may be required to analyze for vinyl chloride at the discretion of the department.

(7) The department may reduce the monitoring frequency specified in subs. (1) and (2) as follows:

(a) For groundwater systems:

1. When VOCs are not detected in the first sample, or any subsequent samples that may be taken, and the system is not vulnerable as determined under par. (d) or (e), monitoring shall be repeated every 5 years.

2. When VOCs are not detected in the first sample, or any subsequent sample that may be taken, and the system is vulnerable as determined under par. (d) or (e):

a. Monitoring shall be repeated every 3 years for systems serving more than 500 connections.

b. Monitoring shall be repeated every 5 years for systems serving less than 500 connections.

3. When VOCs are detected in any sample, the supplier of water shall report to the department within 7 days and collect 3 additional samples at 5 to 10-day intervals during the next 30 days. Monitoring thereafter shall be repeated every 3 months, as required under sub. (1).

(b) For surface water systems:

1. When VOCs are not detected in the first year of quarterly sampling, or any other subsequent sample that may be taken, and the system is not

vulnerable as determined under par. (d) or (e), monitoring shall be performed at a frequency determined by the department.

2. When VOCs are not detected in the first year of quarterly sampling, or any other subsequent sample that may be taken, and the system is vulnerable as determined under par. (d) or (e):

a. Monitoring shall be repeated every 3 years for systems serving more than 500 connections.

b. Monitoring shall be repeated every 5 years for systems serving less than 500 connections.

3. When VOCs are detected in any sample, the supplier of water shall report to the department within 7 days and collect 3 additional samples at 5 to 10-day intervals during the next 30 days. Monitoring thereafter shall be repeated every 3 months, as required under sub. (2).

(c) Notwithstanding pars. (a)3. and (b)3., the department may reduce the frequency of monitoring to once per year for a groundwater system or surface water system having VOCs at levels consistently less than the MCL for 3 consecutive years.

(d) Vulnerability of each public water system shall be determined by the department based upon an assessment of the following factors:

1. Previous monitoring results,
2. Number of persons served by public water system,
3. Proximity of a smaller system to a larger system,
4. Proximity to commercial or industrial use, disposal, or storage of volatile synthetic organic chemicals, and
5. Protection of the water source.

(e) A public water system is deemed to be vulnerable for a period of 3 years after any positive measurement of one or more contaminants either listed in s. NR 109.24 or referenced in s. NR 109.26 except for trihalomethanes or other demonstrated disinfection by-products.

(8) Initial compliance with s. NR 109.24(1) shall be determined based upon the results of the first 4 samples collected under sub. (7)(a)3. or (b)3. Compliance with s. NR 109.24(1) thereafter shall be determined based on the results of a running annual average of quarterly samples for each sampling location. When any result is reported as detected, but less than the limit of quantitation, the limit of detection for that compound shall be used in the calculation of the average. If one location's average is greater than the MCL, the system shall be deemed to be out of compliance. If any one sample result would cause the annual average to be exceeded, then the system shall be deemed to be out of compliance immediately. For systems required to take only one sample per location because no VOCs were detected, compliance shall be based on that one sample.

(9) Analysis under this section shall be conducted using the following EPA methods or their equivalent as approved by EPA. These methods are contained in "Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water," September 1986, available from Environmental and Support Laboratory (EMSL), EPA, Cincinnati, OH 45268. Copies are available for inspection at the office of the department of natural resources, the secretary of state's office and the office of the revisor of statutes.

(a) Method 502.1, "Volatile Halogenated Organic Chemicals in Water by Purge and Trap Gas Chromatography."

(b) Method 503.1, "Volatile Aromatic and Unsaturated Organic Compounds in Water by Purge and Trap Gas Chromatography."

(c) Method 524.1, "Volatile Organic Compounds in Water by Purge and Trap Gas Chromatography/Mass Spectrometry."

(d) Method 524.2, "Volatile Organic Compounds in Water by Purge and Trap Capillary Column Gas Chromatography/Mass Spectrometry."

(e) Method 502.2, "Volatile Organic Compounds in Water by Purge and Trap Capillary Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series."

(10) The department may increase monitoring requirements when necessary to detect contaminant variations within a system.

NR 109.26 SPECIAL MONITORING, REPORTING, AND PUBLIC NOTIFICATION FOR SELECTED ORGANIC CHEMICALS. (1) (a) Suppliers of water having community or non-transient, non-community water systems shall monitor for the contaminants listed in par. (e) by the date specified in Table 1:

Table 1 - Monitoring Schedule by System Size

Number of persons served	Monitoring to begin no later than-
Over 10,000	Jan. 1, 1988
3,300 to 10,000	Jan. 1, 1989
Less than 3,300	Jan. 1, 1991

(b) Surface water systems shall be sampled at points in the distribution system representative of each water system source or at entry points to the

distribution system after any application of treatment. The minimum number of samples is one year of quarterly samples per water source.

(c) Groundwater systems shall be sampled at points of entry to the distribution system representative of each well after any application of treatment. The minimum number of samples is one sample per entry point to the distribution system.

(d) The department may require confirmation and follow-up samples for positive or negative results.

(e) Suppliers of water having community water systems or non-transient, non-community water systems shall monitor for the following contaminants except as provided in par. (f):

1. Chloroform
2. Bromodichloromethane
3. Chlorodibromomethane
4. Bromoform
5. trans-1,2-Dichloroethylene
6. Chlorobenzene
7. m-Dichlorobenzene
8. Dichloromethane
9. cis-1,2-Dichloroethylene
10. o-Dichlorobenzene
11. Dibromomethane
12. 1,1-Dichloropropene
13. Tetrachloroethylene
14. Toluene

15. p-Xylene
16. o-Xylene
17. m-Xylene
18. 1,1-Dichloroethane
19. 1,2-Dichloropropane
20. 1,1,2,2-Tetrachloroethane
21. Ethylbenzene
22. 1,3-Dichloropropane
23. Styrene
24. Chloromethane
25. Bromomethane
26. 1,2,3-Trichloropropane
27. 1,1,1,2-Tetrachloroethane
28. Chloroethane
29. 1,1,2-Trichloroethane
30. 2,2-Dichloropropane
31. o-Chlorotoluene
32. p-Chlorotoluene
33. Bromobenzene
34. 1,3-Dichloropropene
35. Ethylene dibromide (EDB)
36. 1,2-Dibromo-3-chloropropane (DBCP)

(f) Suppliers of water having community water systems or non-transient, non-community water systems shall monitor for EDB and DBCP only if the department determines they are vulnerable to contamination by either or both

of these substances. For the purpose of this paragraph, a vulnerable system is defined as a system which is potentially contaminated by EDB and DBCP, including surface water systems where these 2 compounds are applied, manufactured, stored, disposed of, or shipped upstream, and for groundwater systems in areas where the compounds are applied, manufactured, stored, disposed of, or shipped in the groundwater recharge basin, or for groundwater systems that are in proximity to underground storage tanks that contain leaded gasoline.

(g) Analysis under this section shall be conducted using the recommended EPA methods as follows, or their equivalent as determined by EPA: 502.1, "Volatile Halogenated Organic Compounds in Water by Purge and Trap Gas Chromatography," 503.1, "Volatile Aromatic and Unsaturated Organic Compounds in Water by Purge and Trap Gas Chromatography," 524.1, "Volatile Organic Compounds in Water by Purge and Trap Gas Chromatography/Mass Spectrometry," 524.2, "Volatile Organic Compounds in Water by Purge and Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series." These methods are contained in "Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water," September 1986, available from Environmental Monitoring and Support Laboratory (EMSL), EPA, Cincinnati, Ohio 45268. Analysis of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) shall be conducted by Method 504, "Measurement of 1,2-Dibromoethane (EDB) and 1,2-Dibromo-3-chloropropane (DBCP) in Drinking Water by Microextraction and Gas Chromatography," September 1986, available from EMSL, Cincinnati, Ohio 45268. Copies of all methods listed in this paragraph are available for

inspection at the office of the department, the office of the secretary of state, and the office of the revisor of statutes.

(h) Analysis under this section shall only be conducted by laboratories approved under 40 Code of Federal Regulations 141.24(g)(11). In addition, each laboratory analyzing for EDB and DBCP shall achieve a method detection limit for EDB and DBCP of 0.00002 mg/l, according to the procedures in Appendix B of Part 136, 40 Code of Federal Regulations.

(i) Public water systems may use monitoring data collected any time after January 1, 1983 to meet the requirements for unregulated monitoring, provided that the monitoring program was consistent with the requirements of this section.

(j) Monitoring for the following compounds is required at the discretion of the department:

- (1) 1,2,4-Trimethylbenzene
- (2) 1,2,4-Trichlorobenzene
- (3) 1,2,3-Trichlorobenzene
- (4) n-Propylbenzene
- (5) n-Butylbenzene
- (6) Napthalene
- (7) Hexachlorobutadiene
- (8) 1,3,5-Trimethylbenzene
- (9) p-Isopropyltoluene
- (10) Isopropylbenzene
- (11) Tert-butylbenzene
- (12) Sec-butylbenzene

(13) Fluorotrichloromethane

(14) Dichlorodifluoromethane

(15) Bromochloromethane

(k) Suppliers of water having a non-transient, non-community water system shall repeat the monitoring required in this subsection no less frequently than every 5 years.

(2) (a) The requirements of this subsection only apply to the contaminants listed in sub. (1).

(b) Any supplier of water having a community water system or non-transient, non-community water system who is required to monitor under sub. (1) shall send a copy of the results of such monitoring within 30 days of receipt and any public notice under par. (c) to the department.

(c) The supplier of water shall notify persons served by the system of the availability of the results of sampling under sub. (1) by including a notice in the first set of water bills issued by the system after the receipt of the results or written notice within 3 months. The notice shall identify a person and supply the telephone number to contact for information on the monitoring results.

SECTION 15. NR 109.30(intro.) and (4) are amended to read:

NR 109.30 MAXIMUM MICROBIOLOGICAL CONTAMINANT LEVELS. The following are the maximum contaminant levels for coliform bacteria applicable to community water systems and non-community water systems. Compliance with maximum contaminant levels for coliform bacteria is determined ~~pursuant to~~ under s. NR 109.31(5)(b) for purposes of public notification requirements ~~pursuant~~

~~to~~ under s. NR 109.81.

Note: The public notification provisions of s. NR 109.81 ~~shall~~ do not apply to sub. (3) or (4).

(4) ~~Bacterial~~ If heterotrophic bacterial plate counts on water distributed to the consumer ~~may not~~ exceed 500 organisms per milliliter. ~~When this value is exceeded,~~ the department shall determine if the bacterial count is of public health or nuisance significance and may require appropriate action.

SECTION 16. NR 109.31(5)(a), (b)(intro) & 2., (c), (9) note and (10) are amended to read:

NR 109.31(5)(a)1. When a sample collected under sub. (2) ~~ex (3)~~ exceeds a maximum contaminant level set forth in s. NR 109.30(1) or (2), the supplier of water having a community water system shall collect a repeat sample which shall be considered the check sample from the same sampling point, together with at least 2 additional samples at adjacent or nearby service connections. within 48 hours.

2. When a sample collected under sub. (3) exceeds a maximum contaminant level set forth in s. NR 109.30(1) or (2), the supplier of water having a non-community water system shall collect a repeat sample which shall be considered the check sample from the same sampling point within 48 hours.

(b) When the examination of the ~~check sample~~ samples required in par. (a) ~~shows~~ indicates the presence of coliform organisms in the distribution system, the supplier of water shall:

2. Initiate an investigation, including the collection within 48 hours and examination of additional samples from the same point and other sampling points in the ~~area~~ water system, to define the extent of the problem; and

(c) The department, at its discretion, may require that additional ~~check~~ samples be collected at a specified frequency from the same sampling point and other sampling points in the area and examined to identify and eliminate suspected health hazards when a sample exceeds a maximum contaminant level under s. NR 109.30(1) or (2), even if the check sample required in par. (a) does not indicate the presence of coliform bacteria.

(9)Note: Generally, membrane filter or 5 tube fermentation tests and heterotrophic plate counts of the raw, settled and finished water on an established schedule will be necessary to meet this requirement.

(10) At all waterworks which have a potential for high total bacteria levels because of the water quality, the method of treatment, chemical addition or other cause, the department may require heterotrophic plate counts pursuant to an established schedule. Analyses shall be conducted in accordance with the analytical recommendations set forth in "Standard Methods for the Examination of Water and Wastewater", American Public Health Association, 14th Edition, pp. 908-913. Copies of this publication are available for inspection at the office of the department of natural resources, the secretary of state's office and the office of the revisor of statutes, and may be obtained for personal use from the American Public Health Association, 1015 Eighteenth St., N.W., Washington, D.C.

SECTION 17. The note following NR 109.40(intro.) is repealed.

SECTION 18. NR 109.53(1)(c) is amended to read:

NR 109.53(1)(c) If the average annual maximum contaminant level for gross

alpha particle activity or total radium as set forth in s. NR 109.50 is exceeded, the supplier of water having a community water system shall give notice to the department pursuant to s. NR 109.80 and notify the public as required by s. NR 109.81. Monitoring at quarterly intervals shall be continued until the annual average concentration no longer exceeds the maximum contaminant level or until a monitoring schedule as a condition to a variance under s. NR 109.91, exemption conditional waiver under s. NR 109.90 or enforcement action shall become effective. Special monitoring thereafter shall be at a frequency designated by the department.

SECTION 19. NR 109.60(2) is amended to read:

NR 109.60(2) The following are the secondary standards for inorganic chemicals:

Standard	milligrams per liter (micrograms per liter in parentheses) except as noted
Chloride	250
Color	15 units
Copper	1.0 (1,000 ug/l)
Corrosivity	Noncorrosive
<u>Fluoride*</u>	<u>2.0</u>
Foaming agents	
MBAS (Methylene-Blue Active Substances)	0.5
Hydrogen Sulfide	Not detectable
Iron	0.3
Manganese	0.05 (50 ug/l)
Odor	3 (Threshold No.)
Sulfate	250
Total Residue	500
Zinc	5 (5,000 ug/l)

*Note: The primary maximum contaminant level for fluoride is contained in s. NR 109.11.

SECTION 20. NR 109.60(4) is created to read:

NR 109.60(4) COMPLIANCE WITH THE SECONDARY DRINKING WATER STANDARD AND PUBLIC NOTIFICATION FOR FLUORIDE. Suppliers of water having community water systems that exceed the secondary maximum contaminant level for fluoride as determined by the last single sample taken in accordance with the requirement of s. NR 109.12, but do not exceed the maximum contaminant level for fluoride as specified in s. NR 109.11, shall provide the notice prescribed in s. NR 109.81(5)(i) to all billing units annually, all new billing units at the

time service begins and annually to the department and the department of health and social services

SECTION 21. The note following s. NR 109.61(3) is repealed.

SECTION 22. NR 109.72(1) is amended to read:

NR 109.72(1) For the purpose of compliance with ss. NR 109.12, 109.13, ~~190.14,~~ 109.14, 109.21, ~~109.22~~ 109.23, 109.25 and 109.26, samples shall be analyzed at the state laboratory of hygiene, at a laboratory facility acceptable to the U.S. environmental protection agency, or at a laboratory certified for the safe drinking water test category under ch. NR 149. For the purpose of compliance with ss. NR 109.31 and 109.52, bacteriological and radiological samples shall be analyzed at a laboratory facility certified or approved by the department of health and social services, or at a laboratory facility acceptable to the U.S. environmental protection agency.

~~Note: The requirement in this section to submit data from a certified or registered laboratory is effective on August 28, 1986.~~

SECTION 23. The notes following s. NR 109.74(1) and (2) are repealed.

SECTION 24. NR 109.80(3) is amended to read:

NR 109.80(3) The supplier of water is not required to report analytical results to the department in cases where the state laboratory of hygiene performs the analysis and reports the results to the department, ~~or where a laboratory facility approved by the department of health and social services~~

~~performs a bacteriological analyses and reports the results to the department within the time required by NR 109.31.~~

SECTION 27. NR 109.81 is repealed and recreated to read:

NR 109.81 PUBLIC NOTIFICATION. (1) MAXIMUM CONTAMINANT LEVEL (MCL), TREATMENT TECHNIQUE, VARIANCE, AND CONDITIONAL WAIVER VIOLATIONS. The owner or operator of a public water system which fails to comply with an applicable MCL or treatment technique established by this chapter or which fails to comply with the requirements of any variance under s. NR 109.91 or conditional waiver under s. NR 109.90 shall notify persons served by the system as follows:

(a) Except as provided in par. (c), the owner or operator of a community water system shall give notice:

1. By publication in a daily newspaper of general circulation in the area served by the system as soon as possible, but in no case later than 14 days after the violation or failure. If the area served by a community water system is not served by a daily newspaper of general circulation, notice shall instead be given by publication in a weekly newspaper of general circulation serving the area; and

2. By mail delivery, by direct mail or with the water bill, or by hand delivery, not later than 45 days after the violation or failure. The department may waive mail or hand delivery if it determines that the owner or operator of the community water system in violation has corrected the violation or failure within the 45-day period. The department shall make the determination in writing and within the 45-day period; and

3. For violation of the MCLs of contaminants that may pose an acute risk to human health, by furnishing a copy of the notice to the radio and television stations serving the area served by the community water system as soon as possible but in no case later than 72 hours after the violation. The following violations are acute violations:

a. Any violation specified by the department as posing an acute risk to human health.

b. Any violation of the microbiological MCL which the department determines warrants a notification to boil water.

c. Violation of the MCL for nitrate as defined in s. NR 109.11(2) and determined according to s. NR 109.12.

(b) Except as provided in par. (c), following the initial notice given under par. (a), the owner or operator of the community water system shall give notice at least once every 3 months by mail delivery (by direct mail or with the water bill) or by hand delivery, for as long as the violation or failure exists.

(c) In lieu of the requirements of par. (a)1. or 2., the owner or operator of a community water system in an area that is not served by a daily or weekly newspaper of general circulation shall give notice within 14 days after the violation or failure by hand delivery or by continuous posting in conspicuous places within the area served by the system. Posting shall continue for as long as the violation or failure exists. Notice by hand delivery shall be repeated at least every 3 months for as long as the violation or failure exists.

(d) The owner or operator of a non-community water system shall give notice

within 72 hours after the violation or failure by continuous posting in conspicuous places within the area served by the system. The owner or operator of a system such as a restaurant which is permitted to serve water exceeding a maximum contaminant level to customers away from water outlets shall provide a written public notice at each table. Posting shall continue for as long as the violation or failure exists.

(2) OTHER VIOLATIONS, VARIANCES, CONDITIONAL WAIVERS. The owner or operator of a public water system which fails to perform monitoring required by this chapter, fails to comply with a testing procedure established by this chapter, is subject to a variance granted under Part V of this chapter or is subject to a conditional waiver under Part V of this chapter shall notify persons served by the system as follows:

(a) Except as provided in par. (c) or (d), the owner or operator of a community water system shall give notice within 3 months of the violation or granting of a conditional waiver under s. NR 109.90 by publication in a daily newspaper of general circulation in the area served by the system. If the area served by a community water system is not served by a daily newspaper of general circulation, notice shall instead be given by publication in a weekly newspaper of general circulation serving the area.

(b) Except as provided in par. (c) or (d), following the initial notice given under par. (a), the owner or operator of the community water system shall give notice at least once every 3 months by mail delivery (by direct mail or with the water bill) or by hand delivery, for as long as the violation exists. Repeat notice of the existence of a conditional waiver under s. NR 109.90 shall be given every 3 months for as long as the conditional

waiver remains in effect.

(c) In lieu of the requirements of par. (a) or (b), the owner or operator of a community water system in an area that is not served by a daily or weekly newspaper of general circulation shall give notice, within 3 months of the violation, or granting of a conditional waiver under s. NR 109.90, by hand delivery or by continuous posting in conspicuous places with the area served by the system. Posting shall continue for as long as the violation exists or the conditional waiver remains in effect. Notice by hand delivery shall be repeated at least every 3 months for as long as the violation exists or the conditional waiver remains in effect.

(d) The owner or operator of a non-community water system shall give notice, within 72 hours of the violation or the granting of the variance under s. NR 109.91 or conditional waiver under s. NR 109.90, by continuous posting at all drinking water outlets within the area served by the system. Posting shall continue for as long as the violation exists, or the variance or conditional waiver remains in effect.

(e) The owner or operator of a community water system serving an institution and granted a variance from the maximum contaminant level for nitrate as nitrogen under s. NR 109.91(2) shall give notice, within 72 hours of the granting of the variance, by continuous posting at all drinking water outlets within the area served by the system. Posting shall continue for as long as the variance remains in effect.

(f) In lieu of the requirements of par. (a), (b), (c) or (d), the owner or operator of a public water system may provide a summary public notice for bacteriological monitoring violations totalling no more than 3 months in any

calendar year. Such notice shall be provided no later than 90 days after the end of the calendar year in which the violations occurred.

(3) NOTICE TO NEW BILLING UNITS. The owner or operator of a community water system shall give a copy of the most recent public notice for any outstanding violation of any maximum contaminant level, treatment technique requirement or conditional waiver under s. NR 109.90 to all new billing units or new hookups prior to or at the time service begins.

(4) GENERAL CONTENT OF PUBLIC NOTICE. Each notice required by this section shall provide a clear and readily understandable explanation of the violation, any potential adverse health effects, the population at risk, the steps that the supplier of water is taking to correct such violation, the necessity for seeking alternative water supplies, if any, and any preventive measures the consumer should take until the violation is corrected. Each notice shall be conspicuous and may not contain unduly technical language, unduly small print, or similar problems that frustrate the purpose of the notice. Each notice shall include the telephone number of the owner, operator, or designee of the public water system as a source of additional information concerning the notice. Where appropriate, the notice shall be multi-lingual.

(5) MANDATORY HEALTH EFFECTS LANGUAGE. When providing the information on potential adverse health effects required by sub. (4) in notices of violations of maximum contaminant levels or treatment technique requirements, notices of the granting or the continued existence of a conditional waiver under s. NR 109.90 or a variance under s. NR 109.91 or notices of failure to comply with a conditional waiver under s. NR 109.90 or a variance under s. NR 109.91, the owner or operator of a public water system shall include the following

language specified for each contaminant.

Note: If language for a particular contaminant is not specified below at the time notice is required, this section does not apply.

(a) Trichloroethylene. The United States Environmental Protection Agency (EPA) sets national drinking water standards and has determined that trichloroethylene is a health concern at certain levels of exposure. This chemical is a common metal cleaning and dry cleaning fluid. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set forth the enforceable drinking water standard for trichloroethylene at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(b) Carbon tetrachloride. The United States Environmental Protection Agency (EPA) sets national drinking water standards and has determined that carbon tetrachloride is a health concern at certain levels of exposure. This chemical was once a popular household cleaning fluid. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed to high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are

exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for carbon tetrachloride at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(c) 1,2-Dichloroethane. The United States Environmental Protection Agency (EPA) sets national drinking water standards and has determined that 1,2-dichloroethane is a health concern at certain levels of exposure. This chemical is used as a cleaning fluid for fats, oils, waxes and resins. It generally gets into drinking water from improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for 1,2-dichloroethane at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(d) Vinyl chloride. The United States Environmental Protection Agency (EPA) and the Wisconsin Department of Natural Resources set drinking water standards and have determined that vinyl chloride is a health concern at certain levels of exposure. This chemical is used in industry and is found in drinking water as a result of the breakdown of related solvents. The solvents

are used as cleaners and degreasers of metals and generally get into drinking water by improper waste disposal. This chemical has been associated with significantly increased risks of cancer among certain industrial workers who were exposed to relatively large amounts of this chemical during their working careers. This chemical has also been shown to cause cancer in laboratory animals when the animals are exposed at high levels over their lifetimes. Chemicals that cause increased risk of cancer among exposed industrial workers and in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. The Wisconsin Department of Natural Resources has set the enforceable drinking water standard for vinyl chloride at 0.0002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(e) Benzene. The United States Environmental Protection Agency (EPA) sets national drinking water standards and has determined that benzene is a health concern at certain levels of exposure. The chemical is used as a solvent and degreaser of metals. It is also a major component of gasoline. Drinking water contamination generally results from leaking underground gasoline and petroleum tanks or improper waste disposal. This chemical has been associated with significantly increased risks of leukemia among certain industrial workers who were exposed to relatively large amounts of this chemical during their working careers. This chemical has also been shown to cause cancer in laboratory animals when the animals are exposed at high levels over their lifetimes. Chemicals that cause increased risk of cancer among exposed

industrial workers and in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for benzene at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(f) 1,1-Dichloroethylene. The United States Environmental Protection Agency (EPA) sets national drinking water standards and has determined that 1,1-dichloroethylene is a health concern at certain levels of exposure. This chemical is used in industry and is found in drinking water as a result of the breakdown of related solvents. The solvents are used as cleaners and degreasers of metals and generally get into drinking water by improper waste disposal. This chemical has been shown to cause liver and kidney damage in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals which cause adverse effects in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for 1,1-dichloroethylene at 0.007 parts per million (ppm) to reduce the risk of these adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(g) Para-dichlorobenzene. The United States Environmental Protection Agency (EPA) sets national drinking water standards and has determined that

para-dichlorobenzene is a health concern at certain levels of exposure. This chemical is a component of deodorizers, moth balls and pesticides. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause liver and kidney damage in laboratory animals such as rats and mice when the animals are exposed to high levels over their lifetimes. Chemicals which cause adverse effects in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for para-dichlorobenzene at 0.075 parts per million (ppm) to reduce the risk of these adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(h) 1,1,1-Trichloroethane. The United States Environmental Protection Agency (EPA) sets national drinking water standards and has determined that the 1,1,1-trichloroethane is a health concern at certain levels of exposure. This chemical is used as a cleaner and degreaser of metals. It generally gets into drinking water by improper waste disposal. This chemical has been shown to damage the liver, nervous system and circulatory system of laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during their working careers also suffered damage to the liver, nervous system and circulatory system. Chemicals which cause adverse effects among exposed industrial workers and in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water

standard for 1,1,1-trichloroethane at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(i) Fluoride. The notice shall contain the following language:

Public Notice

Dear User,

The U.S. Environmental Protection Agency requires that we send you this notice on the level of fluoride in your drinking water. The drinking water in your community has a fluoride concentration of _____ (water supplier insert the compliance result which triggered the notification) milligrams per liter (mg/l).

Federal regulations require that fluoride, which occurs naturally in your water supply, not exceed a concentration of 4.0 mg/l in drinking water. This is an enforceable standard called a Maximum Contaminant Level (MCL), and it has been established to protect the public health. Exposure to drinking water levels above 4.0 mg/l for many years may result in some cases of crippling skeletal fluorosis, which is a serious bone disorder.

Federal law also requires that we notify you when monitoring indicates that the fluoride in your drinking water exceeds 2.0 mg/l. This is intended to alert families about dental problems that might affect children under 9 years of age. The fluoride concentration of your water exceeds this federal guideline.

Fluoride in children's drinking water at levels of approximately 1 mg/l reduces the number of dental cavities. However, some children exposed to

levels of fluoride greater than about 2.0 mg/l may develop dental fluorosis. Dental fluorosis, in its moderate and severe forms, is a brown staining and/or pitting of the permanent teeth.

Because dental fluorosis occurs only when developing teeth (before they erupt from the gums) are exposed to elevated fluoride levels, households without children are not expected to be affected by this level of fluoride. Families with children under the age of 9 are encouraged to seek other sources of drinking water for their children to avoid the possibility of staining and pitting.

Your water supplier can lower the concentration of fluoride in your water so that you will still receive the benefits of cavity prevention while the possibility of stained and pitted teeth is minimized. Removal of fluoride may increase your water costs. Treatment systems are also commercially available for home use. Information on such systems is available at the address given below. Low fluoride bottled drinking water that would meet all standards is also commercially available.

For further information, contact _____ (water supplier insert the name, address, and telephone number of a contact person at the public water system) at your water system.

(6) PUBLIC NOTICES FOR FLUORIDE. Notice of violation of the maximum contaminant level for fluoride, notice of a conditional waiver under s. NR 109.90 from the maximum contaminant level for fluoride, and notice of failure to comply with a conditional waiver under s. NR 109.90 for the maximum contaminant level for fluoride shall consist of the public notice prescribed in sub. (5)(i), plus a description of any steps which the system is taking to

come into compliance.

(7) FAILURE TO COMPLY. If a public water system fails to comply with the requirements of this section, the department may issue public notification directly.

SECTION 26. Chapter NR 109, Part V is repealed and recreated to read:

Part V - CONDITIONAL WAIVERS AND VARIANCES

NR 109.90 CONDITIONAL WAIVERS. (1) A public water system is eligible to apply to the department for a conditional waiver respecting compliance with a maximum contaminant level or treatment technique requirement if:

(a) Because of the characteristics of the raw water sources which are reasonably available, the public water system cannot comply with a maximum contaminant level,

(b) Compelling factors indicate that the public water system cannot comply with a maximum contaminant level or treatment technique requirement for a limited period of time, and

(c) Granting of a conditional waiver will not result in an unreasonable risk to public health.

(2) The department may grant a conditional waiver with the following requirements if the supplier of water has established that the criteria of sub. (1) have been met:

(a) Compliance, including increments of progress, by the supplier of water with each maximum contaminant level or treatment technique requirement within the time frame specified by the department in the compliance schedule, and

(b) Implementation by the supplier of water of such control measures as the

department deems necessary until compliance with the maximum contaminant level or treatment technique requirement is achieved.

(3) Before the department may grant a conditional waiver under this subsection a class 1 public notice under ch. 985, Stats., and opportunity for a public hearing on the proposed conditional waiver shall be provided by the department. A hearing held pursuant to a request under this paragraph is a class 1 hearing and shall be conducted in accordance with ch. 227, Stats.

(4) The department may extend a compliance deadline not to exceed 3 years after the date a conditional waiver is granted under sub. (2) if the supplier of water establishes that:

(a) The public water system cannot meet the maximum contaminant level or treatment technique requirement without capital improvements which cannot be completed within the period of such conditional waiver,

(b) The supplier of water has entered into an enforceable agreement to become part of a regional public water system or, if the supplier of water needs financial assistance for the necessary capital improvements, the supplier water has entered into an agreement to obtain such financial assistance, and

(c) The supplier of water is taking all practicable steps to meet the standard.

(5) The department may renew an extension granted under sub. (4) if the supplier of water establishes that:

(a) The public water system does not serve more than 500 service connections,

(b) The public water system cannot meet a maximum contaminant level or

treatment technique requirement without financial assistance for the necessary capital improvements, and

(c) The public water system is taking all practicable steps to achieve compliance with a maximum contaminant level or treatment technique requirement.

NR 109.91 NITRATE VARIANCES. (1) A non-community water system is eligible for a variance from the nitrate as nitrogen maximum contaminant level if:

(a) The department determines that because of the characteristics of the raw water sources which are reasonably available, the non-community water system cannot comply with the maximum contaminant level for nitrate as nitrogen; and

(b) The non-community water system has not had a nitrate as nitrogen sample which exceeds 20 mg/l, confirmed by a check sample; and

(c) The supplier of water continuously posts a department approved notice at all water taps supplied with water by the non-community water system. The notice shall state that the nitrate as nitrogen level exceeds 10 mg/l and describe the potential health effects of exposure; and

(d) The supplier of water ensures that water from its system will not be available to children under 6 months of age and provides bottled water which complies with all maximum contaminant levels for such children; and

(e) No adverse health effects will result.

(2) A community water system serving a nursing home, prison or mental health care facility, is eligible for a variance from the nitrate as nitrogen maximum contaminant level if:

(a) The institution does not permit infants under 6 months of age as residents; and

(b) The community water system has not had a nitrate as nitrogen sample which exceeds 20 mg/l, confirmed by a check sample; and

(c) The institution continuously posts a department approved notice at all water taps supplied with water by the community water system. The notice shall state that the nitrate as nitrogen level exceeds 10 mg/l and describe the potential health effects of exposure; and

(d) The institution ensures that water from its system will not be available to children under 6 months of age and provides bottled water which complies with all maximum contaminant levels for such children; and

(e) No adverse health effects will result.

(3) The department may condition the issuance of a variance under this section on compliance with such control measures as it deems necessary. Failure to comply with any term or condition of a variance granted by the department under this section voids the variance.

SECTION 27. NR 149.03(5)(b) is repealed and recreated to read:

NR 149.03(5)(b) "Code of Federal Regulations title 40, Part 136, Appendix A and B", U.S. Government Printing Office, Washington, D.C. 20402, 1987.

SECTION 28. NR 149 Table 1 is repealed and recreated to read:

TABLE 1
Test Categories

<u>No.</u>	<u>Test Category</u>	<u>Key Analyte</u>	<u>Analytes In Test Category (Includes all forms of the given analytes)</u>
1.	Oxygen Utilization	Total BOD ₅	Biochemical oxygen demand, carbonaceous biochemical

2. Nitrogen	Each analyte for which certification or registration is desired except nitrite.	oxygen demand Nitrate as Nitrogen, Nitrite as Nitrogen, Ammonia as Nitrogen, total Kjeldahl Nitrogen.
3. Phosphorus	Total Phosphorus	Orthophosphate, Phosphorus
4. Physical	Total Suspended Solids	Total Solids, Dissolved Solids, Volatile Solids, Total Suspended Solids.
5. General I	Chloride	Alkalinity/Acidity, Chloride, Hardness, Sulfate
6. General II	Each analyte for which certification or registration is desired.	Chemical Oxygen Demand, Cyanide, Fluoride, Total Phenolic Compounds

Table 1 Continued

No.	Test Category	Key Analyte	Analytes In Test Category (Includes all forms of the given analytes)
7.	General III	No reference sample	Bromide, Color, Odor, Oil and Grease, Specific Conductance, Sulfide, Sulfite, Surfactants, Turbidity
8.	General IV	No reference sample	Corrosivity, EP Toxicity, Ignitability, Reactivity, Total Organic Carbon, Total Organic Halide.
9.	Metals I	Copper and Cadmium	Aluminum, Antimony, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Gold, Iridium, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Osmium, Palladium, Platinum, Potassium, Rhodium, Ruthenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Tungsten, Vanadium, Zinc, and Zirconium.
10.	Metals II	Each analyte for which certification or registration is desired	Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Gold, Iridium, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Osmium, Palladium, Platinum, Potassium, Rhodium, Ruthenium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Tungsten, Vanadium, Zinc, and Zirconium.

Table 1 Continued

No.	Test Category	Key Analyte	Analytes In Test Category (Includes all forms of the given analytes)
11.	Organics; Purgeable by Gas Chromatography or Gas Chromatography/Mass Spectrometer	Trichloroethylene and Benzene	Purgeable Halocarbons, Purgeable Aromatics, Arolein, Acrylonitrile.
12.	Organics; Base/Neutral Extractables by Gas Chromatography or Gas Chromatography/Mass Spectrometer	P,P'-DDT and Dieldrin	Phthalate Esters, Nitrosamines, Organochlorine Pesticides, Nitroaromatics, Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Nonpurgeable Chlorinated Hydrocarbons, Base Neutral Extractable Pesticides (e.g., Atrazine, Cyanazine, Phorate, Linuran, and Butylate).
13.	Organic; Acid Extractables by Gas Chromatography or Gas Chromatography/Mass Spectrometer	Pentachlorophenol	Phenolic Compounds.
14.	Organics; Extractables by Liquid Chromatography	Naphthalene	Benzidines, Polynuclear Aromatic Hydrocarbons, Pesticides subject to Liquid Chromatography (e.g., carbofuran, oxamyl, and methomyl).
15.	Organics; Acid Extractable Pesticides	2,4-D	2,4-D, 2,4,5-T, Picloram, Chloramben, and other acid extractable pesticides.
16.	Pesticides not included in other test categories	No reference sample; for each analyte for which certification or registration is desired the accuracy and precision data (acceptable according to an authoritative source) shall be submitted to demonstrate the ability to perform the analysis. See s. NR 149.13(11).	Aldicarb, Ethylene Dibromide, and Glyphosate, and other pesticides.

Table 1 Continued

No.	Test Category	Key Analyte	Analytes In Test Category (Includes all forms of the given analytes)
17.	Organics; Polychlorinated PCB (Common Aroclor) Biphenyls		Polychlorinated Biphenyls.
18.	Organics; Polychlorinated Dibenzo-P-Dioxin	No reference sample; for each analyte for which certification or registration is desired the accuracy and precision data (acceptable according to an authoritative source) shall be submitted to demonstrate the ability to perform the analysis. See s. NR 149.13(11).	Polychlorinated Dibenzo-P-Dioxin, Polychlorinated Dibenzo-P-Furan.
19.	Safe Drinking Water	Each analyte for which certification is desired.	Arsenic, Barium, Cadmium Chromium, Fluoride, Lead, Mercury, Nitrate as Nitrogen, Selenium, Silver, Endrin, Lindane, Methoxychlor, Toxaphene, 2,4-D, 2,4,5-TP, Total Trihalomethanes, Benzene, Vinyl Chloride, Carbon Tetrachloride, 1,2-dichloroethane, trichloroethylene, 1,1-dichloroethylene, 1,1,1-trichloroethane, para-dichlorobenzene.
20.	Any Single Analyte	That Analyte.	That Analyte.

Note: The test category for metals I does not contain arsenic, mercury, or selenium. These metals along with all the metals in metals I can be found in metals II.

SECTION 29. NR 149.11(5) is amended to read:

NR 149.11(5) The limit of quantitation and limit of detection may be determined in accordance with s. NR 149.03(5)(b) and (j).

SECTION 30. NR 149.23 to 149.27 are renumbered NR 149.24 to 149.28, respectively.

SECTION 31. NR 149.23 is created to read:

NR 149.23 REQUIREMENTS FOR VOLATILE ORGANIC COMPOUNDS. (1) To receive certification to conduct analyses for benzene, vinyl chloride, carbon tetrachloride, 1,2-dichloroethane, trichloroethylene, 1,1-dichloroethylene, 1,1,1-trichloroethane, and paradichlorobenzene, the laboratory shall:

(a) Analyze reference samples which include these substances provided by EPA; and

(b) Achieve the acceptance limits for at least 6 of the 7 organic chemicals listed above; and

(c) Except for vinyl chloride, achieve quantitative results on the analyses performed under par. (a) that are within $\pm 20\%$ of the actual amount of the substances in the reference sample when the actual amount is greater than or equal to 0.010 mg/l; and

(d) Except for vinyl chloride, achieve quantitative results on the analyses performed under par. (a) that are within $\pm 40\%$ of the actual amount of the substances in the reference sample when the actual amount is less than 0.010 mg/l; and

(e) Except for vinyl chloride, achieve a limit of detection of 0.0005 mg/l; and

(f) Be currently certified for the analyses of trihalomethanes.

(2) In addition to meeting the requirements of sub. (1), to receive certification for vinyl chloride, the laboratory shall:

(a) Achieve quantitative results on the analyses performed under sub. (1)(a) that are within $\pm 40\%$ of the actual amount of vinyl chloride in the reference sample; and

(b) Achieve a limit of detection of 0.0003 mg/l; and

(c) Receive certification or be currently certified for the other substances listed in sub. (1).

SECTION 31. NR 149.25(3)(i), as renumbered, is amended to read:

NR 149.25(3)(i) If a mass spectrometer detector is used for total trihalomethane analysis, the mass spectrometer performance tests described in Table 5 in s. NR ~~149.26~~ 149.27(3)(c)3. using p-Bromofluorobenzene shall be conducted once during each 8 to 12 hour work shift. Records of satisfactory performance and corrective action shall be maintained.

The foregoing rules were approved and adopted by the State of Wisconsin Natural Resources Board on _____.

The rules shall take effect on the first day of the month following publication in the Wisconsin administrative register as provided in s. 227.22(2)(intro.), Stats.

Dated at Madison, Wisconsin May 5, 1989

STATE OF WISCONSIN

DEPARTMENT OF NATURAL RESOURCES

By Carroll D. Besadny

(SEAL)

Carroll D. Besadny, Secretary





State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

BOX 7921
MADISON, WISCONSIN 53707
1020

May 5, 1989

Mr. Orlan L. Prestegard
Revisor of Statutes
Suite 702
30 W. Mifflin Street

Dear Mr. Prestegard:

Enclosed are two copies, including one certified copy, of State of Wisconsin Natural Resources Board Order No. WS-30-88. These rules were reviewed by the Assembly Committee on Natural Resources and the Senate Committee on Urban Affairs, Environmental Resources, Utilities and Elections pursuant to s. 227.19, Stats. A summary of the final regulatory flexibility analysis and comments of the legislative review committees is also enclosed.

You will note that this order takes effect following publication. Kindly publish it in the Administrative Code accordingly.

Sincerely,

A handwritten signature in cursive script that reads "C. D. Besadny".

C. D. Besadny
Secretary

Enc.

