

The statement of scope for this rule, SS 075-22, was approved by the Governor on September 8, 2022, published in Register No. 801A2 on September 12, 2022, and approved by the Natural Resources Board on December 14, 2022. This rule was approved by the Governor on insert date.

ORDER OF THE STATE OF WISCONSIN NATURAL RESOURCES BOARD
AMENDING RULES

The Wisconsin Natural Resources Board proposes an order to **amend** NR 140.10 Table 1 relating to setting numerical standards to minimize the concentration of polluting substances for certain Per- and Polyfluoroalkyl Substances (PFAS) in groundwater and affecting small business.

DG-17-22

Analysis Prepared by the Department of Natural Resources

1. Statute Interpreted:

Chapter 160, Stats., including ss. 160.001, 160.07, 160.11, 160.13, 160.15, 160.19, and 281.15, 281.19(1), and 299.11, Stats., authorize the department to modify and create rules relating to development of numerical groundwater quality standards.

2. Statutory Authority:

Sections 160.07(5), 160.15(1), 160.19, 281.15, 281.19(1), and 299.11, Stats.

3. Explanation of Agency Authority:

Chapter 160, Stats., establishes an administrative process for developing numerical state groundwater quality standards to be used as criteria for the protection of public health and welfare by all state groundwater regulatory programs. Chapter 160, Stats., directs the department to use this administrative process to establish numeric groundwater quality standards for substances of public health or welfare concern, found in, or having a reasonable probability of being detected in, the groundwater resources of the state.

The department is required to engage in rulemaking for all substances of public health concern for which the Wisconsin Department of Health Services (DHS) develops enforcement standard recommendations (s. 160.07(5), Stats.) The department is also required to establish by rule preventative action limits for all substances with enforcement standards. s. 160.15(1), Stats. Section 281.15, Stats., states that the department shall promulgate rules setting standards of water quality, applicable to the waters of the state, that protect the public interest, including the protection of public health and welfare, and the present and prospective future use of such waters for public and private water systems. Section 281.19(1), Stats., grants the department the authority to issue general orders and adopt rules applicable throughout the state for the construction, installation, use and operation of practicable and available systems, methods and means for preventing and abating pollution of the waters of the state.

In accordance with ch. 160, Stats., the reliability of sampling data is to be considered when determining the range of responses that a regulatory agency may take, or require, to address attainment or exceedance of a state groundwater quality standard at an applicable “point of standards application.” Section 299.11, Stats., authorizes the department, in conjunction with the Department of Agriculture Trade and Consumer Protection (DATCP), to establish uniform minimum criteria for laboratories certified to conduct water analysis testing, and to establish accepted methodologies to be followed in conducting tests and sampling protocols and documentation procedures to be followed when collecting water samples for testing.

4. Related Statutes or Rules:

Section 281.12(1), Stats., grants the department general authority to carry out planning, management and regulatory programs necessary to protect, maintain and improve the quality and management of the waters of the state, ground and surface, public and private.

Chapter 280, Stats., authorizes the department to prescribe, publish and enforce minimum standards and rules to be pursued in the obtaining of pure drinking water for human consumption. Chapter NR 809, Wis. Adm. Code, establishes minimum state drinking water standards for the protection of public health, safety and welfare. This administrative code contains numeric water quality protection standards applicable to public water supply systems in Wisconsin.

Wisconsin state drinking water standards, applicable to public drinking water systems, have been established for: perfluorooctanoic acid (PFOA), and perfluorooctanesulfonic acid (PFOS). Wisconsin state drinking water maximum contaminant levels (MCLs) have been established, in ch. NR 809, Wis. Adm. Code, for PFOA, at 70 nanograms per liter (ng/L) and for PFOS at 70 ng/L, individually and combined. Note that concentration in ng/L is equivalent to parts per trillion (ppt).

5. Plain Language Analysis:

Chapter 160, Stats., requires the department to develop numerical groundwater quality standards, consisting of enforcement standards and preventive action limits. Chapter NR 140, Wis. Adm. Code, establishes groundwater standards. These proposed amendments to ch. NR 140, Wis. Adm. Code, would add new state groundwater quality standards for four substances: PFOA, PFOS, perfluorobutanesulfonic acid (PFBS) and hexafluoropropylene oxide dimer acid (HFPO-DA/“GenX”). In accordance with s. 160.07, Stats., amendments to ch. NR 140, Wis. Adm. Code, groundwater quality standards for substances of public health concern are based on recommendations from DHS. DHS’s recommendations for new state groundwater quality standards for PFOA and PFOS are available at:

<https://www.dhs.wisconsin.gov/publications/p02434v-2.pdf>. DHS’s recommendations for new state groundwater quality standards for PFBS and HFPO-DA are available at:

<https://www.dhs.wisconsin.gov/publications/p02807.pdf>

6. Summary of, and Comparison with, Existing or Proposed Federal Statutes and Regulations:

The United States Environmental Protection Agency (EPA) establishes health-based drinking water MCLs, cancer risk levels and health advisories (HAs), that are used to assess the quality of groundwater drinking water supplies. Federal drinking water MCLs are established based on scientific risk assessments and, in some cases, economic and technological considerations. Cancer risk levels are established as the concentration of a chemical in drinking water that corresponds to a specific excess estimated lifetime cancer risk. Federal lifetime health advisories (LHAs) are developed based on an established health risk acceptable daily intake (ADI) level or reference dose (RfD). An ADI or RfD is the daily oral exposure to a chemical that is likely to be without an appreciable risk over a lifetime.

The proposed amendments to ch. NR 140, Wis. Adm. Code, would add new state numeric groundwater quality standards for: PFOA, PFOS, PFBS and HFPO-DA. Federal public drinking water MCLs have not yet been established for these per- and polyfluoroalkyl substances (PFAS), however, in 2022 EPA released “interim updated” health advisories for PFOA at 0.004 ng/L, and for PFOS at 0.02 ng/L, and “final” health advisories for PFBS at 2,000 ng/L, and for HFPO-DA at 10 ng/L.

In March of 2023, EPA announced proposed National Primary Drinking Water Regulation (NPDWR) public drinking water system MCLs for six PFAS: PFOA, PFOS, PFBS, HFPO-DA, perfluorohexane

sulfonic acid (PFHxS) and perfluorononanoic acid (PFNA). Proposed are a PFOA MCL at 4.0 ng/L and a PFOS MCL, also at 4.0 ng/L. Also proposed is to regulate mixtures of one or more of four PFAS: PFBS, HFPO-DA, PFHxS and PFNA, using a hazard index (HI) approach. With this approach, a ratio called a hazard quotient (HQ) would be calculated for each of four PFAS (PFBS, HFPO-DA, PFHxS and PFNA) by dividing the measured concentration of each of the four PFAS in drinking water, by a Health Based Water Concentration (HBWC), established for each of the four PFAS (2,000 ng/L for PFBS, 10.0 ng/L for HFPO-DA, 9.0 ng/L for PFHxS and 10.0 ng/L for PFNA). The individual PFAS HQs would then be summed to yield the mixture HI. The proposed MCL for the four PFAS mixture is an HI of 1.0 (unitless). EPA has stated that they anticipate finalizing these regulations by the end of 2023.

7. If Held, Summary of Comments Received During Preliminary Comment Period and at Public Hearing on the Statement of Scope:

The department held an online preliminary public hearing on the statement of scope on November 4, 2022. Thirty-three members of the public attended the hearing. The public comment period ended on November 4, 2022. The department received 25 written comments on the proposed statement of scope from individuals and organizations. Twenty-four supplied testimony in support. One (representing Wisconsin Paper Council, Wisconsin Manufactures & Commerce, Wisconsin Civil Justice Council and Midwest Food Products Association) testified in opposition.

8. Comparison with Similar Rules in Adjacent States:

The states adjacent to Wisconsin, Minnesota, Michigan, Illinois and Iowa, use groundwater protection values/levels/standards in their regulation of practices and activities that might impact the quality of groundwater. Minnesota, Michigan, and Illinois have promulgated individual state groundwater protection standards. Iowa uses established federal standards (federal drinking water MCLs, LHAs and established cancer risk levels) as its state groundwater protection standards.

Groundwater protection quality values/levels/standards are usually developed based on health risk assessments. States may use state-specific health risk assessments, factors and methodology in calculating and developing their groundwater protection standards. This use of different health risk assessment factors and methodologies has led to the establishment of different state groundwater protection values/levels/standards for the same substance. For example, the health-based groundwater protection level for PFOA used by the states surrounding Wisconsin varies by state. The level established in Minnesota is 35 ng/L, the level established in Michigan is 8 ng/L, and Illinois has developed a drinking water health-based guidance level (HBGL) for PFOA at 2 ng/L. Iowa uses federal lifetime health advisory levels as its groundwater protection levels and is currently using the federal “interim updated” health advisory level for PFOA of 0.004 ng/L.

Minnesota: The state of Minnesota has established state groundwater protection "Health Risk Limits" (HRLs) under Minnesota Statutes Section 103H.201. The state of Minnesota established an HRL for PFOA in 2018 at 35 ng/L. The Minnesota Department of Health has also calculated "Health Based Values" (HBVs) for some groundwater contaminants. Minnesota HBVs are not standards that have been promulgated by rule but are calculated concentrations that may be used as advisory levels by Minnesota state groundwater and environmental protection programs. The state of Minnesota established an HBV for PFOS in 2020 at 15 ng/L and an HBV for PFBS in 2022 at 100 ng/L.

Michigan: The state of Michigan has established state groundwater protection quality standards. Michigan "Drinking Water Criteria and Risk Based Screening Levels (RBSLs) are Michigan state groundwater protection standards authorized in accordance with Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451 (NREPA). As established under Part 201, Environmental Remediation, of

the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended [MCL 324.20120a(5)], Michigan state drinking water standards become the PFOA and PFOS generic cleanup criteria for groundwater used as drinking water. Michigan has established RBSLs for PFOA at 8 ng/L, for PFOS at 16 ng/L, for PFBS at 420 ng/L, and for HFPO-DA at 370 ng/L.

Illinois: The Illinois Environmental Protection Agency has developed drinking water health-based guidance levels (HBGLs) for PFOA at 2 ng/L, PFOS at 14 ng/L, PFBS at 2,100 ng/L and HFPO-DA at 21 ng/L. These guidance levels are not drinking water standards, but indicate an increased risk for PFAS-related health effects when the level of PFAS in drinking water exceeds them. The state of Illinois establishes state groundwater quality standards for "potable resource groundwater" in 35 Ill. Adm. Code 620, environmental protection regulations. Illinois state "Groundwater Quality Standards for Class I: Potable Resource Groundwater" have not yet been established for PFOA, PFOS, PFBS or HFPO-DA, however, the Illinois Pollution Control Board is currently considering proposed amendments to the Illinois Part 620 groundwater regulations that would establish groundwater standards for six PFAS, including PFOA, PFOS, PFBS and HFPO-DA. These proposed amendments would establish groundwater standards for PFOA at 2 ng/L, PFOS at 7.7 ng/L, PFBS at 1,200 ng/L and HFPO-DA at 12 ng/L.

Iowa: The state of Iowa has not established specific state groundwater protection standards. In accordance with Iowa Environmental Protection Regulations 567 IAC Chapter 133, Iowa uses established federal EPA lifetime health advisory levels, "negligible risk levels" (NRLs) for carcinogens (estimate of one additional cancer case per million people over a lifetime of exposure) and federal drinking water MCLs as "Action Levels" in their regulation of practices and activities that may adversely impact groundwater quality. Iowa is currently using the federal "final" health advisories for PFBS (2,000 ng/L) and HFPO-DA (10 ng/L), and the "interim updated" health advisories for PFOA (0.004 ng/L) and PFOS (0.02 ng/L), in its PFAS Contaminated Sites Site Investigation Protocol and public water supply PFAS sampling efforts.

9. Summary of Factual Data and Analytical Methodologies Used and How Any Related Findings Support the Regulatory Approach Chosen:

In accordance with s. 160.07, Stats., the department is required, for substances of public health concern, to propose rules establishing recommendations from DHS as state groundwater quality enforcement standards. In accordance with s. 160.15, Stats., the department is required to establish by rule a preventive action limit for each substance for which an enforcement standard is established.

To develop proposed groundwater standards, DHS follows the process described in ss. 160.07 to 160.17, Stats. This includes a review of federal numbers, state drinking water standards, and acceptable daily intake values from the EPA, research studies and a search of peer-reviewed scientific research. DHS then develops a scientific support document describing the findings of their review and basis for the recommended proposed groundwater standards. At the conclusion of its review, DHS provides the department its recommendations for groundwater quality standards for the protection of public health.

DHS recommended new groundwater quality standards for PFOA and PFOS in a document titled, *Recommended Public Health Groundwater Quality Standards, Scientific Support Documents for Cycle 10 Substances, January 2022*. DHS recommended new groundwater quality standards for PFBS and HFPO-DA in a document titled, *Summary and Scientific Support Documents for Cycle 11 Recommended Groundwater Standards*. These documents are available at DHS' website:

<https://www.dhs.wisconsin.gov/water/gws.htm>.

10. Analysis and Supporting Documents Used to Determine the Effect on Small Business or in Preparation of an Economic Impact Report:

The numeric groundwater standards adopted in ch. NR 140, Wis. Adm. Code, are not self-implementing. They are implemented through other statutory provisions and administrative rules that use the groundwater standards in regulatory actions, requirements, responses, and enforcement mechanisms. State regulatory agencies, in exercising their statutory authority and duties that are established elsewhere in the statutes and administrative rules, establish regulations that assure that regulated facilities and activities will not cause state groundwater quality standards to be exceeded.

After the department establishes groundwater standards in ch. NR 140, Wis. Adm. Code, each state regulatory agency is required to review its administrative rules and amend or create rules necessary to ensure that the activities, practices, and facilities regulated by the regulatory agency complies with the new standards. s. 160.19, Stats. The implementation and compliance costs of this rule could be affected – either increased or decreased -- by changes in the regulatory authority or requirements of the programs that use the standards.

The department is seeking public input on its draft EIA for this proposed rule. The department is soliciting comments relating to the estimated economic impact of the proposed rule related to specific regulatory programs that rely upon ch. NR 140, Wis. Adm. Code. To comply with the directive in s. 227.137, Stats., the department will analyze and provide a detailed quantification of the estimated economic impact of the proposed rule, including the implementation and compliance costs that are reasonably expected to be incurred by or passed along to the businesses, local governmental units, and individuals that may be affected by the proposed rule, based on the current administrative and statutory authority in the regulatory programs that rely on groundwater standards.

11. Effect on Small Business (initial regulatory flexibility analysis):

State regulatory agency programs that use ch. NR 140, Wis. Adm. Code, groundwater standards may impact small business, including groundwater quality standards for PFOA, PFOS, PFBS or HFPO-DA. Promulgated standards may necessitate site monitoring and investigation, and potentially, compliance response actions.

12. Agency Contact Person:

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13. Place where comments are to be submitted and deadline for submission:

Written comments may be submitted at the public hearings, by regular mail, or email to:

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P.O. Box 7921, 101 S. Webster St., DG/5
Madison, WI 53707-7921
Phone: 608-514-5663
E-mail: DNR140GroundwaterQualityStandards@wisconsin.gov

Comments may be submitted to the department contact person listed above or to DNRAAdministrativeRulesComments@wisconsin.gov until the deadline given in the upcoming notice of public hearing. The notice of public hearing and deadline for submitting comments will be published in the Wisconsin Administrative Register and on the department’s website, at <https://dnr.wi.gov/calendar/hearings/>. Comments may also be submitted through the Wisconsin Administrative Rules Website at <https://docs.legis.wisconsin.gov/code/chr/active>.

RULE TEXT

SECTION 1. NR 140.10 Table 1 is amended to read:

NR 140.10 Table 1

**Table 1
Public Health Groundwater Quality Standards**

| Substance¹ | Enforcement Standard (micrograms per liter – except as noted) | Preventive Action Limit (micrograms per liter – except as noted) |
|--|--|---|
| Acetochlor | 7 | 0.7 |
| Acetochlor ethane sulfonic acid + oxanilic acid (Acetochlor – ESA + OXA) | 230 | 46 |
| Acetone | 9 milligrams/liter (mg/l) | 1.8 mg/l |
| Alachlor | 2 | 0.2 |
| Alachlor ethane sulfonic acid (Alachlor – ESA) | 20 | 4 |
| Aldicarb | 10 | 2 |
| Aluminum | 200 | 40 |
| Ammonia (as N) | 9.7 mg/l | 0.97 mg/l |
| Anthracene | 3000 | 600 |
| Antimony | 6 | 1.2 |
| Arsenic | 10 | 1 |
| Asbestos | 7 million fibers per liter (MFL) | 0.7 MFL |
| Atrazine, total chlorinated residues | 3 ² | 0.3 ² |
| Bacteria, <i>E. coli</i> | 0 | 0 |
| Barium | 2 mg/l | 0.4 mg/l |
| Bentazon | 300 | 60 |
| Benzene | 5 | 0.5 |
| Benzo(b)fluoranthene | 0.2 | 0.02 |
| Benzo(a)pyrene | 0.2 | 0.02 |
| Beryllium | 4 | 0.4 |
| Boron | 1000 | 200 |
| Bromodichloromethane | 0.6 | 0.06 |
| Bromoform | 4.4 | 0.44 |
| Bromomethane | 10 | 1 |
| Butylate | 400 | 80 |
| Cadmium | 5 | 0.5 |
| Carbaryl | 40 | 4 |

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|---|---------|----------|
| Carbofuran | 40 | 8 |
| Carbon disulfide | 1000 | 200 |
| Carbon tetrachloride | 5 | 0.5 |
| Chloramben | 150 | 30 |
| Chlordane | 2 | 0.2 |
| Chlorodifluoromethane | 7 mg/l | 0.7 mg/l |
| Chloroethane | 400 | 80 |
| Chloroform | 6 | 0.6 |
| Chlorpyrifos | 2 | 0.4 |
| Chloromethane | 30 | 3 |
| Chromium (total) | 100 | 10 |
| Chrysene | 0.2 | 0.02 |
| Cobalt | 40 | 8 |
| Copper | 1300 | 130 |
| Cyanazine | 1 | 0.1 |
| Cyanide, free ³ | 200 | 40 |
| Dacthal | 70 | 14 |
| 1,2-Dibromoethane (EDB) | 0.05 | 0.005 |
| Dibromochloromethane | 60 | 6 |
| 1,2-Dibromo-3-chloropropane (DBCP) | 0.2 | 0.02 |
| Dibutyl phthalate | 1000 | 100 |
| Dicamba | 300 | 60 |
| 1,2-Dichlorobenzene | 600 | 60 |
| 1,3-Dichlorobenzene | 600 | 120 |
| 1,4-Dichlorobenzene | 75 | 15 |
| Dichlorodifluoromethane | 1000 | 200 |
| 1,1-Dichloroethane | 850 | 85 |
| 1,2-Dichloroethane | 5 | 0.5 |
| 1,1-Dichloroethylene | 7 | 0.7 |
| 1,2-Dichloroethylene (cis) | 70 | 7 |
| 1,2-Dichloroethylene (trans) | 100 | 20 |
| 2,4-Dichlorophenoxyacetic Acid (2,4-D) | 70 | 7 |
| 1,2-Dichloropropane | 5 | 0.5 |
| 1,3-Dichloropropene (cis/trans) | 0.4 | 0.04 |
| Di (2-ethylhexyl) phthalate | 6 | 0.6 |
| Dimethenamid/Dimethenamid-P | 50 | 5 |
| Dimethoate | 2 | 0.4 |
| 2,4-Dinitrotoluene | 0.05 | 0.005 |
| 2,6-Dinitrotoluene | 0.05 | 0.005 |
| Dinitrotoluene, Total Residues ⁴ | 0.05 | 0.005 |
| Dinoseb | 7 | 1.4 |
| 1,4-Dioxane | 3 | 0.3 |
| Dioxin (2, 3, 7, 8-TCDD) | 0.00003 | 0.000003 |
| Endrin | 2 | 0.4 |
| EPTC | 250 | 50 |
| Ethylbenzene | 700 | 140 |
| Ethyl ether | 1000 | 100 |
| Ethylene glycol | 14 mg/l | 2.8 mg/l |
| Fluoranthene | 400 | 80 |
| Fluorene | 400 | 80 |
| Fluoride | 4 mg/l | 0.8 mg/l |

| | | |
|--|---|--------------------------------|
| Fluorotrichloromethane | 3490 | 698 |
| Formaldehyde | 1000 | 100 |
| Heptachlor | 0.4 | 0.04 |
| Heptachlor epoxide | 0.2 | 0.02 |
| Hexachlorobenzene | 1 | 0.1 |
| <u>Hexafluoropropylene oxide dimer acid (HFPO-DA)</u> | <u>300 nanograms/liter (ng/l)</u> | <u>30 ng/l</u> |
| <i>N</i> -Hexane | 600 | 120 |
| Hydrogen sulfide | 30 | 6 |
| Lead | 15 | 1.5 |
| Lindane | 0.2 | 0.02 |
| Manganese | 300 | 60 |
| Mercury | 2 | 0.2 |
| Methanol | 5000 | 1000 |
| Methoxychlor | 40 | 4 |
| Methylene chloride | 5 | 0.5 |
| Methyl ethyl ketone (MEK) | 4 mg/l | 0.8 mg/l |
| Methyl isobutyl ketone (MIBK) | 500 | 50 |
| Methyl tert-butyl ether (MTBE) | 60 | 12 |
| Metolachlor/s-Metolachlor | 100 | 10 |
| Metolachlor ethane sulfonic acid + oxanilic acid (Metolachlor – ESA + OXA) | 1.3 mg/l | 0.26 mg/l |
| Metribuzin | 70 | 14 |
| Molybdenum | 40 | 8 |
| Monochlorobenzene | 100 | 20 |
| Naphthalene | 100 | 10 |
| Nickel | 100 | 20 |
| Nitrate (as N) | 10 mg/l | 2 mg/l |
| Nitrate + Nitrite (as N) | 10 mg/l | 2 mg/l |
| Nitrite (as N) | 1 mg/l | 0.2 mg/l |
| <i>N</i> -Nitrosodiphenylamine | 7 | 0.7 |
| Pentachlorophenol (PCP) | 1 | 0.1 |
| Perchlorate | 1 | 0.1 |
| <u>Perfluorobutanesulfonic acid (PFBS)</u> | <u>450</u> | <u>90</u> |
| <u>Perfluorooctanesulfonic acid (PFOS)⁵</u> | <u>20 ng/l</u> | <u>2 ng/l</u> |
| <u>Perfluorooctanoic acid (PFOA)⁵</u> | <u>20 ng/l</u> | <u>2 ng/l</u> |
| Phenol | 2 mg/l | 0.4 mg/l |
| Picloram | 500 | 100 |
| Polychlorinated biphenyls (PCBs) | 0.03 | 0.003 |
| Prometon | 100 | 20 |
| Propazine | 10 | 2 |
| Pyrene | 250 | 50 |
| Pyridine | 10 | 2 |
| Selenium | 50 | 10 |
| Silver | 50 | 10 |
| Simazine | 4 | 0.4 |
| Styrene | 100 | 10 |
| Tertiary Butyl Alcohol (TBA) | 12 | 1.2 |
| 1,1,1,2-Tetrachloroethane | 70 | 7 |
| 1,1,2,2-Tetrachloroethane | 0.2 | 0.02 |
| Tetrachloroethylene | 5 | 0.5 |

| | | |
|---|--------|----------|
| Tetrahydrofuran | 50 | 10 |
| Thallium | 2 | 0.4 |
| Toluene | 800 | 160 |
| Toxaphene | 3 | 0.3 |
| 1,2,4-Trichlorobenzene | 70 | 14 |
| 1,1,1-Trichloroethane | 200 | 40 |
| 1,1,2-Trichloroethane | 5 | 0.5 |
| Trichloroethylene (TCE) | 5 | 0.5 |
| 2,4,5-Trichlorophenoxy-propionic acid(2,4,5-TP) | 50 | 5 |
| 1,2,3-Trichloropropane | 60 | 12 |
| Trifluralin | 7.5 | 0.75 |
| Trimethylbenzenes (1,2,4- and 1,3,5- combined) | 480 | 96 |
| Vanadium | 30 | 6 |
| Vinyl chloride | 0.2 | 0.02 |
| Xylene ⁵⁶ | 2 mg/l | 0.4 mg/l |

¹ Appendix I contains Chemical Abstract Service (CAS) registry numbers, common synonyms and trade names for most substances listed in Table 1.

² Total chlorinated atrazine residues includes parent compound and the following metabolites of health concern: 2-chloro-4-amino-6-isopropylamino-s-triazine (formerly deethylatrazine), 2-chloro-4-amino-6-ethylamino-s-triazine (formerly deisopropylatrazine) and 2-chloro-4,6-diamino-s-triazine (formerly diamino-atrazine).

³ "Cyanide, free" refers to the simple cyanides (HCN, CN⁻) and /or readily dissociable metal-cyanide complexes. Free cyanide is regulatorily equivalent to cyanide quantified by approved analytical methods for "amenable cyanide" or "available cyanide".

⁴ Dinitrotoluene, Total Residues includes the dinitrotoluene (DNT) isomers: 2,3-DNT, 2,4-DNT, 2,5-DNT, 2,6-DNT, 3,4-DNT and 3,5-DNT.

⁵ [This standard applies to the sum of PFOA and PFOS concentrations in groundwater.](#)

⁵⁶ Xylene includes meta-, ortho-, and para-xylene combined.

Note: Consistent with the Department of Health Services' recommendation for the NR 140 ammonia standard, the department will use total ammonia, which is the sum of ionized ammonia and un-ionized ammonia in groundwater, in applying groundwater ammonia standards.

SECTION 2. EFFECTIVE DATE. This rule takes effect on the first day of the month following publication in the Wisconsin Administrative Register as provided in s. 227.22 (2) (intro.), Stats.

SECTION 3. BOARD ADOPTION. This rule was approved and adopted by the State of Wisconsin Natural Resources Board on [DATE].

Dated at Madison, Wisconsin _____.

STATE OF WISCONSIN

DEPARTMENT OF NATURAL RESOURCES

BY _____

For Adam N. Payne, Secretary