The statement of scope for this rule, SS 021-22, was approved by the Governor on March 18, 2022, published in Register No. 795A3 on March 21, 2022, and approved by the Natural Resources Board on May 25, 2022. This rule was approved by the Governor on February 2, 2023.

ORDER OF THE STATE OF WISCONSIN NATURAL RESOURCES BOARD
AMENDING AND CREATING RULES

The Wisconsin Natural Resources Board adopts an order to **amend** NR 140.10 Table 1, 140.16 (1) (d), 140.20 (2) (intro.) and Table 3, 140.24 (3) (intro.) and Appendix I to Table 1; and to **create** NR 140.20 (3) relating to setting numerical standards to minimize the concentration of polluting substances in groundwater (Cycle 10 Bacteria).

DG-04-22

Analysis Prepared by the Department of Natural Resources

1. Statute Interpreted:
Sections 160.07, 160.15, 160.19, 281.15, 281.19(1), and 299.11, Wis. Stats., authorize the department to modify and create rules relating to development of numerical groundwater quality standards.

2. Statutory Authority:
Sections 160.07, 160.15, 160.19, 281.15, 281.19(1), and 299.11, Wis. Stats.

3. Explanation of Agency Authority:
Chapter 160, Wis. 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, Wis. 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. Specifically, s. 160.07(5), Wis. Stats., directs the department to propose rules reflecting the Wisconsin Department of Health Services (DHS) recommendations for enforcement standards, and s. 160.15(1), Wis. Stats., requires the department also promulgate preventative action limits for each substance with an enforcement standard. Under s. 160.15(3), Wis. Stats., the department has authority to establish by rule indicator parameters used to monitor certain regulated facilities.

Section 281.15, Wis. 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), Wis. 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, Wis. 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, Wis. 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), Wis. 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, Wis. 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 maximum contaminant levels (MCLs) have been established, in ch. NR 809, Wis. Adm. Code, for *Escherichia coli* (*E. coli*) bacteria.

5. Plain Language Analysis:
Chapter 160, Wis. Stats., is Wisconsin's Groundwater Standards Protection law. This chapter 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.

Proposed amendments to ch. NR 140, Wis. Adm. Code, add new groundwater quality standards for *E. coli* bacteria. *E. coli* bacteria is a type of coliform bacteria used as an indicator of fecal contamination in groundwater. Groundwater quality standards currently exist in ch. NR 140, Wis. Adm. Code, for total coliform bacteria. The department is proposing to revise the status of total coliform bacteria in ch. NR 140, Wis. Adm. Code, to make it an indicator parameter.

Minor revisions, to clarify rule language and update rule reference information, are also proposed to ch. NR 140, Wis. Adm. Code. These revisions include:

- Revising order of Antimony and Anthracene in s. NR 140.10, Table 1 to correct their alphabetical order in the table.
- Removing, in s. NR 140.20, Table 3, the indicator parameter for ammonia nitrogen. Health standards were established for ammonia (as N), in s. NR 140.10, Table 1, as part of the "Cycle 9" revisions to ch. NR 140.
- Making needed additions and revisions to ch. NR 140 Appendix I to Table 1 substance names, Chemical Abstracts Service (CAS) registry numbers, and common synonyms.

6. Summary of, and Comparison with, Existing or Proposed Federal Statutes and Regulations:
The U.S. Environmental Protection Agency (US EPA) establishes health-based drinking water MCLs 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.

Under the federal Revised Total Coliform Rule (RTCR), the US EPA changed the regulatory status of total coliform bacteria in public drinking water systems. EPA replaced the MCL violation for total coliform bacteria with a treatment technique requirement and established an MCL for *E. coli* bacteria. Total coliform bacteria include bacteria that naturally occur in the environment, and total coliform are, with a few exceptions, not harmful to humans. Under the RTCR, detection of total coliform bacteria is used as an indicator of possible microbial pathways into a public drinking water system. The RTCR includes a "treatment technique" response for detection of total coliform bacteria in a water supply

system. This response requires investigation of the sanitary condition of the system, and action to correct any defects found. *E. coli* bacteria are a sub-group of coliform bacteria considered to be a more specific indicator of fecal contamination and the potential for pathogens to be present in drinking water. Under the RTCR, detection of *E. coli* bacteria in a public water supply system is an MCL violation.

7. If Held, Summary of Comments Received During Preliminary Comment Period and at Public Hearing on the Statement of Scope:
A preliminary public hearing on Statement of Scope SS 021-22, related to revisions to ch. NR 140, was held on April 22, 2022. Comments on the proposed scope were accepted through April 22, 2022. One comment was received requesting the department revise the scope statement to specify that only the substances *E. coli* bacteria and total coliform bacteria would be addressed under this rulemaking.

8. Comparison with Similar Rules in Adjacent States:
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 not established individual state groundwater protection standards for total coliform or *E. coli* bacteria but, because bacteria are present everywhere in the environment, including groundwater, these states all recommend regular testing of private drinking water supply wells for total coliform bacteria (which includes *E. coli* bacteria). Iowa uses established federal standards (such as federal drinking water MCLs) as its state groundwater protection standards. In accordance with Iowa Environmental Protection Regulations 567 IAC Chapter 133, Iowa uses established federal drinking water MCLs as "Action Levels" in its regulation of practices and activities that may adversely impact groundwater quality. Federal drinking water MCLs have been established for *E. coli* bacteria.

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, Wis. 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, Wis. 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, Wis. Stats. This includes a review of federal numbers, state drinking water standards, and acceptable daily intake values from the US 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. DHS provided the department its recommendations for groundwater quality standards for the protection of public health in a document titled, Recommended Public Health Groundwater Quality Standards, Scientific Support Documents for "Cycle 10" Substances, January 2022.

DHS recommended new standards for 17 substances: perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS), hexavalent chromium, strontium, thiamethoxam, imidacloprid, clothianidin, isoxaflutole, isoxaflutole DKN degradate, isoxaflutole BA degradate, thiencarbazone-methyl, Dacthal TPA and MTP degradates, glyphosate, glyphosate aminomethylphosphonic acid (AMPA) degradate, sulfentrazone, and *E. coli* bacteria.

DHS also provided recommendations for revisions to existing public health related state groundwater quality standards for 8 additional substances: trichloroethylene (TCE), tetrachloroethylene (PCE), 1,2,3-trichloropropane (1,2,3-TCP), 1,4-dioxane, aluminum, boron, molybdenum and cobalt.

In 2019, the department began rulemaking for all "Cycle 10" substances, including *E. coli*. That proposed rule was brought to the Natural Resources Board for adoption on February 23, 2023, and was not adopted. The scope statement for that rulemaking effort expired in March 2022 without the rule being promulgated.

In this rule, the department is proposing establishing the DHS enforcement standard recommendations and accompanying preventive action limit for *E. coli* bacteria in ch. NR 140, Wis. Adm. Code, state groundwater quality protection standards. The department is also proposing to remove the enforcement standard for total coliform bacteria and replace it with an indicator parameter preventative action limit, per s. 160.15(3), Wis. Stats.

10. Analysis and Supporting Documents Used to Determine the Effect on Small Business or in Preparation of an Economic Impact Report:
Chapter NR 140, Wis. Adm. Code, is not a self-implementing administrative rule and is independent from the regulatory programs that contain actions, requirements, responses, and enforcement mechanisms for the various activities or facilities they regulate. The cost of implementation and compliance for groundwater standards is dictated entirely by the regulatory agencies and their numerous regulatory programs based on authority outside of ch. NR 140, Wis. Adm. Code. Implementation and compliance costs for regulatory agencies may change after they complete their statutorily required review of new or amended groundwater standards and, if necessary, amend or create administrative rules to ensure compliance with new groundwater standards.

The department does not anticipate any economic impacts related to establishing groundwater quality standards for *E. coli* bacteria or revising the status of total coliform bacteria in ch. NR 140, Wis. Adm. Code, to make it an indicator parameter. An exceedance of the *E. coli* bacteria standard is already an exceedance of the existing total coliform bacteria standard in ch. NR 140, Wis. Adm. Code. Therefore, the department calculates that the proposed amendments will result in decreased costs compared to the current rule, as a smaller subset of groundwater that currently tests positive for total coliform bacteria will end up testing positive for *E. coli* bacteria.

11. Effect on Small Business (initial regulatory flexibility analysis):
The department does not anticipate that this rule will impact any specific business or business sector.

12. Agency Contact Person: Bruce Rheineck; 101 S. Webster Street, Madison, WI 53703; BruceD.Rheineck@wisconsin.gov; (608) 266-2104

13. Place where comments are to be submitted and deadline for submission:
A comment period on the rule was held from September 26, 2022 to October 28, 2022. A public hearing was held on October 21, 2022.

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

Substance[1]	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
~~Antimony~~	~~6~~	~~1.2~~
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, *E. coli*	0	0
~~Bacteria, Total Coliform~~	~~0[3]~~	~~0[3]~~
Barium	2 ~~milligrams/liter~~ (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
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[4,3]	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
Dibutylphthalate	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[5,4]	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
N-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/1	0.2 mg/l
N-Nitrosodiphenylamine	7	0.7
Pentachlorophenol (PCP)	1	0.1
Perchlorate	1	0.1
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[6,5]	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 diaminoatrazine).

~~[3] Total coliform bacteria may not be present in any 100 ml sample using either the membrane filter (MF) technique, the presence-absence (P-A) coliform test, the minimal medium ONPG-MUG (MMO-MUG) test or not present in any 10 ml portion of the 10 tube multiple tube fermentation (MTF) technique~~.

[4] [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".

[5] [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.

[6] [5] Xylene includes meta-, ortho-, and para-xylene combined.

SECTION 2. NR 140.16 (1) (d) is amended to read:

NR 140.16 (1) (d) *Laboratory requirements*. All groundwater quality samples, except samples collected for total coliform bacteria laboratory analysis ~~and~~, *E. coli* laboratory analysis, field analyses for pH, field analysis for specific conductance, and field analysis for temperature, shall be analyzed in accordance with provisions under ch. NR 149 by a laboratory certified or registered under ch. NR 149. Samples for total coliform bacteria and *E. coli* analysis shall be analyzed by the state laboratory of hygiene or at a laboratory approved or certified by the department of agriculture, trade and consumer protection.

SECTION 3. NR 140.20 (2) (intro.) is amended to read:

NR 140.20 (2) ESTABLISHING PREVENTATIVE ACTION LIMITS FOR INDICATOR PARAMETERS. For each indicator parameter, except total coliform bacteria, for which groundwater monitoring is required by the department, the preventive action limit shall be established based upon a change of water quality with respect to background water quality according to the methodology specified in ~~pars. (a) to (c) and in Table 3.~~ any of the following:

SECTION 4. NR 140.20 (3) is created to read:

NR 140.20 (3) TOTAL COLIFORM BACTERIA INDICATOR PARAMETER. The preventive action limit for total coliform bacteria is 0. If the source of total coliform bacteria is determined to be from a regulated facility, practice, or activity, response actions under s. NR 140.24 may be required.

SECTION 5. NR 140.20 Table 3 is amended to read:

NR 140.20 Table 3

Table 3
Methodology for Establishing Preventive Action Limit for Indicator Parameters

Parameter	*Minimum Increase (mg/l)*

Alkalinity	100
Biochemical oxygen demand (BOD_5)	25
Calcium	25
Chemical oxygen demand (COD)	25
Magnesium	25
Nitrogen series	
~~Ammonia nitrogen~~	~~2~~
Organic nitrogen	2
Total nitrogen	5
Potassium	5
Sodium	10
Field specific conductance	200 microSiemens/cm
Total dissolved solids (TDS)	200
Total hardness	100
Total organic carbon (TOC)	1
Total organic halogen (TOX)	0.25

SECTION 6. NR 140.24 (3) (intro.) is amended to read:

NR 140.24 (3) RANGE OF RESPONSES FOR INDICATOR PARAMETERS. Except as otherwise provided in this subsection, the range of responses ~~which~~that the department may take or may require if a preventive action limit for an indicator parameter identified in Table 3 has been attained or exceeded, is one or more of the responses in items 1 to 4 in Table 5. If total coliform bacteria are detected at a facility, practice, or activity groundwater monitoring point, that monitoring point shall be sampled for *E. coli* bacteria. The range of responses that the department may take or may require if a preventive action limit for total coliform bacteria has been attained or exceeded, is one or more of the responses in Table 5. The range of responses is one or more of the responses in items 1 to 6 of Table 5 in the event the department determines that:

SECTION 7. NR 140 Appendix I to Table 1 is amended to read:

NR 140 Appendix I to Table 1

CHAPTER NR 140

APPENDIX I TO TABLE 1

PUBLIC HEALTH GROUNDWATER QUALITY STANDARDS

Substance	**CAS RN[1]**	**Common synonyms/~~*Tradename*~~[2]**
Acetochlor	34256−82−1	~~*Cadence, Degree, Harness, Keystone, Over-time, Volley*~~
Acetochlor ethane sulfonic acid + oxanilic acid	187022−11−3 (ESA) 184992−44−4 (OXA)	Acetochlor − ESA + OXA
Acetone	67−64−1	*Propanone*

Alachlor	15972−60−8	~~*Lasso*~~
Alachlor ethane sulfonic acid	142363−53−9	Alachlor−ESA, Alachlor Ethane Sulfonate, MON 5775
Aldicarb	116−06−3	~~*Temik*~~
Aluminum	7429−90−5	
Ammonia	7664−41−7	
Anthracene	120−12−7	Para−naphthalene
Asbestos	1332−21−4	
Bentazon	25057−89−0	~~*Basagran*~~
Benzene	71−43−2	
Benzo(b)fluoranthene	205−99−2	B(b)F,3,4−Benzofluoranthene
Benzo(a)pyrene	50−32−8	BaP, B(a)P
Boron	7440−42−8	
Bromodichloromethane	75−27−4	Dichlorobromomethane, BDCM
Bromoform	75−25−2	Tribromomethane
Bromomethane	74−83−9	Methyl bromide
Butylate	2008−41−5	S−ethyl di−isobutylthiocarbamate~~, *Sutan+*~~
Carbaryl	63−25−2	~~*Sevin*~~
Carbofuran	1563−66−2	~~*Furadan*~~
Carbon disulfide	75−15−0	Carbon bisulfide
Carbon tetrachloride	56−23−5	Tetrachloromethane, Perchloroethane
Chloramben	133−90−4	
Chlordane	57−74−9	
Chlorodifluoromethane	75−45−6	HCFC−22, Freon 22
Chloroethane	75−00−3	Ethyl chloride, Monochloroethane
Chloroform	67−66−3	Trichloromethane
Chlorpyrifos	2921−88−2	~~*Dursban, Lorsban, Warhawk, Hatchet, Yuma, Whirlwind, Eraser*~~
Chloromethane	74−87−3	Methyl chloride
Chromium (total)	7440−47−3	
Chrysene	218−01−9	1,2−Benzphenanthrene
Cobalt	7440−48−4	
Cyanazine	21725−46−2	~~*Bladex ,*~~ 2−chloro−4−ethylamino−6−nitriloisopropylamino−s−triazine
Cyanide, free	57−12−5	
Dacthal	1861−32−1	DPCA, Chlorothal, ~~*Dacthalor,*~~ 1,4−benzene-dicarboxylic acid
Dibromochloromethane	124−48−1	Chlorodibromomethane, DBCM
1,2−Dibromo−3−chloropropane	96−12−8	DBCP, Dibromochloropropane
1,2−Dibromoethane	106−93−4	EDB, Ethylene dibromide, Dibromoethane
Dibutyl phthalate	84−74−2	DP, Di−*n*−butyl phthalate, *n*−Butyl phthalate
Dicamba	1918−00−9	~~*Banvel*~~
1,2−Dichlorobenzene	95−50−1	o−Dichlorobenzene, o−DCB

1,3−Dichlorobenzene	541−73−1	m−Dichlorobenzene, m−DCB
1,4−Dichlorobenzene	106−46−7	p−Dichlorobenzene, p−DCB
Dichlorodifluoromethane	75−71−8	*Freon 12*
1,1,−Dichloroethane	75−34−3	Ethylidine chloride
1,2−Dichloroethane	107−06−2	1,2−DCA, Ethylene dichloride
1,1−Dichloroethylene	75−35−4	1,1−DCE, 1,1−Dichloroethene, Vinylidene chloride
1,2−Dichloroethylene (cis)	156−59−2	cis−Dichloroethylene, 1,2−Dichloroethene (cis)
1,2−Dichloroethylene (trans)	156−60−5	trans−1,2−Dichloroethylene
2,4−Dichlorophenoxyacetic acid	94−75−7	2,4−D
1,2−Dichloropropane	78−87−5	Propylene dichloride
1,3−Dichloropropene (cis/trans)[3]	542−75−6	~~*Telone,*~~ DCP, Dichloropropylene
Di(2−ethylhexyl) phthalate	117−81−7	DEHP, Bis(2−ethylhexyl) phthalate, 1,2−Benzenedicarboxylic acid, Bis (2−ethyl-hexyl)ester
Dimethenamid/Dimethinamid−P	87674−68−8 163515−14−8 (−P)	~~*Frontier, Outlook, Propel, Establish, Sortie, Tower*~~
Dimethoate	60−51−5	
2,4−Dinitrotoluene	121−14−2	2,4−DNT, 1−methyl−2,4−dinitrobenzene
2,6−Dinitrotoluene	606−20−2	2,6−DNT, 2−methyl−1,3−dinitrobenzene
Dinitrotoluene, Total Residues	25321−14−6	Dinitrotoluene, DNT
Dinoseb	88−85−7	2−(1−methylpropyl)−4,6−dinitrophenol
1,4−Dioxane	123−91−1	*p*−Dioxane
Dioxin	1746−01−6	2,3,7,8−TCDD,2,3,7,8−Tetrachlorodibenzo−p−dioxin
Endrin	72−20−8	
EPTC	759−94−4	~~*Eptam, Eradicane*~~
Ethylbenzene	100−41−4	Phenylethane, EB
Ethyl ether	60−29−7	Diethyl Ether
Ethylene glycol	107−21−1	
Fluoranthene	206−44−0	Benzo(jk)fluorene
Fluorene	86−73−7	2,3−Benzidine, Diphenylenemethane
Fluoride	7681−49−4	
Fluorotrichloromethane	75−69−4	*Freon11*, Trichlorofluoromethane
Formaldehyde	50−00−0	
Heptachlor	76−44−8	~~*Velsicol*~~
Heptachlor epoxide	1024−57−3	
Hexachlorobenzene	118−74−1	Perchlorobenzene~~, *Granox*~~
N−Hexane	110−54−3	Hexane, Skellysolve B
Hydrogen sulfide	7783−06−4	Dihydrogen sulfide
Lindane	58−89−9	
Manganese	7439−96−5	
Mercury	7439−97−6	
Methanol	67−56−1	Methyl alcohol, Wood alcohol

Methoxychlor	72−43−5	
Methylene chloride	75−09−2	Dichloromethane, Methylene dichloride
Methyl ethyl ketone	78−93−3	MEK, 2−Butanone
Methyl isobutyl ketone	108−10−1	MIBK, 4−Methyl−2−pentanone, Isopropylacetone, *Hexone*
Methyl tert−butyl ether	1634−04−4	MTBE, 2−Methoxy−2−methyl−propane, tert−Butyl methyl ether
Metolachlor/s−Metolachlor	51218−45−2 87392−12−9 (s−)	~~*Dual, Bicep, Milocep, Stalwart, Parallel, Prefix, Charger, Brawl, Cinch, Dual Magnum, Boundary*~~
Metolachlor ethane sulfonic acid + oxanilic acid	171118−09−5 (ESA) 152019−73−3 (OXA)	Metolachlor − ESA + OXA
Metribuzin	21087−64−9	~~Sencor, Lexone~~
Molybdenum	7439−98−7	
Monochlorobenzene	108−90−7	Chlorobenzene
Naphthalene	91−20−3	
N−Nitrosodiphenylamine	86−30−6	NDPA
Pentachlorophenol	87−86−5	PCP, Pentachlorohydroxybenzene
Perchlorate	14797−73−0	Perchlorate and perchlorate salts, Perchlorate ion
Phenol	108−95−2	
Picloram	1918−02−1	~~*Tordon,*~~ 4−amino−3,5,6−trichloropicolinic acid
Polychlorinated biphenyls[4]		PCBs
Prometon	1610−18−0	~~*Pramitol, Prometone*~~
Pyrene	129−00−0	Benzo(def)phenanthrene
Pyridine	110−86−1	Azabenzene
Simazine	122−34−9	~~*Princep*~~, 2−chloro−4,6−diethylamino−s−tri- azine
Styrene	100−42−5	Ethenylbenzene, Vinylbenzene
Tertiary Butyl Alcohol	75−65−0	TBA
1,1,1,2−Tetrachlorethane	630−20−6	1,1,1,2−TCA, 1,1,1,2−PCA
1,1,2,2,−Tetrachloroethane	79−34−5	1,1,2,2−TCA, 1,1,2,2−PCA
Tetrachloroethylene	127−18−4	Perchloroethylene, PERC, Tetrachloroethene
Tetrahydrofuran	109−99−9	THF
Toluene	108−88−3	Methylbenzene
Toxaphene	8001−35−2	
1,2,4−Trichlorobenzene	120−82−1	
1,1,1−Trichloroethane	71−55−6	Methylchloroform, 1,1,1−TCA
1,1,2−Trichloroethane	79−00−5	1,1,2−TCA, Vinyl trichloride
Trichloroethylene	79−01−6	TCE, Chloroethene
2,4,5−Trichlorophenoxy− propionic acid	93−72−1	2,4,5−TP~~, *Silvex*~~
1,2,3−Trichloropropane	96−18−4	1,2,3−TCP, Glycerol trichlorohyrin
Trifluralin	1582−09−8	~~*Treflan*~~

1,2,4−Trimethylbenzene	95−63−6	
1,3,5−Trimethylbenzene	108−67−8	
Vanadium	7440−62−2	
Vinyl chloride	75−01−4	VC, Chloroethene
Xylene[5]		

[1]Chemical Abstracts Service (CAS) registry numbers are unique numbers assigned to a chemical substance. The CAS registry numbers were published by the U.S. Environmental Protection Agency in 40 CFR Part 264, Appendix IV

[2]Common synonyms include those widely used in government regulations, scientific publications, commerce and the general public. ~~A trade name, also known as the proprietary name, is the specific, registered name given by a manufacturer to a product. Trade names are listed in *italics*.~~ Common synonyms ~~and trade names~~ should be cross-referenced with CAS registry number to ensure the correct substance is identified. Table 1 contains groundwater quality standards for pesticide active ingredients and their degradation breakdown products. Active ingredients are the chemicals in a pesticide product that kill, control, or repel pests. Pesticide products are given proprietary "trade names" by the pesticide product manufacturer. A database of pesticide products approved for use in Wisconsin is accessible through the Department of Agriculture, Trade and Consumer Protection (DATCP) home web page (search for "pesticide database"). The U.S. Environmental Protection Agency (EPA) also maintains a database of registered pesticide products, called the Pesticide Product and Label System (PPLS), on its website. These pesticide product databases can be searched by active ingredient to find the pesticide products, and their trade names, that contain a specific pesticide active ingredient.

[3]This is a combined chemical substance which includes cis 1,3-Dichloropropene (CAS RN 10061-01-5) and trans 1,3-Dichloropropene (CAS RN 10061-02-6).

[4]Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals (same molecular composition, different molecular structure and formula), including constituents of Aroclor-1016 (CAS RN12674-11-2), Aroclor-1221 (CAS RN 11104-28-2), Aroclor-1232 (CAS RN 11141-16-5), Aroclor-1242 (CAS RN 53469-21-9), Aroclor-1248 (CAS RN 12672-29-6), Aroclor-1254 (CAS RN 11097-69-1), and Aroclor-1260 (CAS RN 11096-82-5).

[5]Xylene (CAS RN 1330-20-7) refers to a mixture of three isomers, meta-xylene (CAS RN 108-38-3), ortho-xylene (CAS RN 95-47-6), and para-xylene (CAS RN 106-42-3)

SECTION 8. 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 9. BOARD ADOPTION. This rule was approved and adopted by the State of Wisconsin Natural Resources Board on January 25, 2023.

Dated at Madison, Wisconsin _____.

STATE OF WISCONSIN

DEPARTMENT OF NATURAL RESOURCES

BY _____

For Adam N. Payne