

STATEMENT OF SCOPE

Department of Natural Resources

DNR Rule Number: DG-01-26

Relating To: Amendments to ch. NR 140 to set numeric standards to minimize the concentration of pesticide substances in groundwater (Cycle 13)

Rule Type: Permanent

Rule Scope:

1. Finding/nature of emergency (Emergency Rule only):

The rule will be proposed as a permanent rule.

2. Detailed description of the objective of the proposed rule:

The proposed rule will amend ch. NR 140, Wis. Adm. Code, to add new public health-based groundwater standards for several pesticide substances that have been detected or have a reasonable probability of being detected in groundwater. The specific substances that will be considered for groundwater standards promulgation are listed in Table 1.

Chapter 160, Wis. Stats., and ch. NR 140, Wis. Adm. Code, provide the process for setting numeric standards for consistent use in state regulatory programs to minimize the concentration of polluting substances that have been detected in, or have a reasonable probability of entering the groundwater resources of the state. Under ch. 160, Wis. Stats., the department is required to promulgate groundwater quality standards consisting of enforcement standards (ESs) and preventive action limits (PALs). These standards are based on recommendations from the Wisconsin Department of Health Services (DHS) that are developed using peer-reviewed science and statutory criteria set forth in ch. 160, Wis. Stats. Chapter NR 140, Wis. Adm. Code, establishes Wisconsin's groundwater quality standards for substances detected in or having a reasonable probability of entering the groundwater resources of the state. The proposed rule will add the numeric standards for several pesticide substances in ch. NR 140, Wis. Adm. Code, but will not amend the regulatory programs in other parts of state statute and code that use groundwater standards in carrying out their regulatory authority.

Currently, the pesticide substances listed in Table 1 do not have promulgated groundwater quality standards in Wisconsin. These substances are being considered for numeric standards pursuant to ch. 160, Wis. Stats. DHS will evaluate the substances and may recommend enforcement standards under ss. 160.07 and 160.13, Wis. Stats., and preventive action limits under s. 160.15, Wis. Stats. DHS may recommend standards for fewer substances than those listed in Table 1 if sufficient scientific data are not available to support the development of groundwater standards.

Table 1. Pesticide substances considered for groundwater standards promulgation.

Substance	CAS RN¹	Pesticide class	Note	Included in previous Scope Statements (SS)
Boscalid	188425-85-6	Fungicide	Parent material ²	No
Chlorantraniliprole	500008-45-7	Insecticide	Parent material	Yes – SS 029-21 (Cycle 11)
Chlorothalonil	1897-45-6	Fungicide	Parent material	No
4-hydroxy-2,5,6-trichloroisophthalonitrile	28343-61-5	Fungicide	Metabolite ³ of Chlorothalonil	No
Clothianidin	210880-92-5	Insecticide	Parent material and metabolite of Thiamethoxam	Yes – SS 090-19 (Cycle 10)
Cyantraniliprole	736994-63-1	Insecticide	Parent material	No
Dimethenamid ethane sulfonic acid (ESA)	205939-58-8	Herbicide	Metabolite of Dimethenamid	No
Dimethenamid oxanilic acid (OA or OXA)	380412-59-9	Herbicide	Metabolite of Dimethenamid	No
Dinotefuran	165252-70-0	Insecticide	Parent material	No
Fomesafen	72178-02-0	Herbicide	Parent material	Yes – SS 029-21 (Cycle 11)
Glyphosate	1071-83-6	Herbicide	Parent material	Yes – SS 090-19 (Cycle 10)
Hydroxyatrazine	2163-68-0	Herbicide	Metabolite of Atrazine	No
Imidacloprid	138261-41-3	Insecticide	Parent material	Yes – SS 090-19 (Cycle 10)
Isoxaflutole	141112-29-0	Herbicide	Parent material	Yes – SS 090-19 (Cycle 10)
Isoxaflutole diketone nitrile (DKN)	143701-75-1	Herbicide	Metabolite of Isoxaflutole	Yes – SS 090-19 (Cycle 10)
Metalaxyl Metalaxyl-M	57837-19-1 70630-17-0	Herbicide	Parent material	Yes – SS 029-21 (Cycle 11)

Metribuzin desamino (DA)	35045-02-4	Herbicide	Metabolite of Metribuzin	No
Metribuzin desaminodiketo (DADK)	52236-30-3	Herbicide	Metabolite of Metribuzin	No
Sulfentrazone	122836-35-5	Herbicide	Parent material	Yes – SS 090-19 (Cycle 10)
Sulfentrazone 3-carboxylic acid	134391-01-8	Herbicide	Metabolite of Sulfentrazone	No
Thiamethoxam	153719-23-4	Insecticide	Parent material	Yes – SS 090-19 (Cycle 10)

¹ Chemical Abstract Service (CAS) registry number (RN).

² The original chemical substance as manufactured and applied before it breaks down or changes in the environment.

³ A substance formed when the parent material is transformed in the environment.

⁴ Also known as Mefenoxam.

The objective of the proposed rule is to protect public health, as groundwater is the primary source of drinking water for much of the state. Pesticide products are widely applied statewide. A [2023 survey](#) conducted by the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) estimated that 43.1 percent of wells in Wisconsin contained at least one detectable pesticide substance. Many pesticides are highly soluble in water, exhibit low soil sorption, and may persist in groundwater once present. Certain pesticide substances have been associated with adverse human health effects. The pesticides listed in Table 1 were selected based on their detection rate in groundwater, and their estimated use and resulting potential for occurrence in groundwater. Additionally, when a metabolite was included in the list for those reasons, the corresponding parent compound was also included if NR 140 standards had not already been established for the parent compound. The potential health effects associated with the pesticide substances evaluated in this rulemaking will be assessed by DHS and documented on the [DHS groundwater quality standards webpage](https://www.dhs.wisconsin.gov/water/gws.htm) (<https://www.dhs.wisconsin.gov/water/gws.htm>).

Additional rule changes may be considered to establish the objectives described in this scope statement.

3. Description of the existing policies relevant to the rule, new policies proposed to be included in the rule, and an analysis of policy alternatives:

Description of existing and new policies

The Natural Resources Board (NRB) has approved amendments to ch. NR 140 effective in 1988, 1990, 1992, 1994, 1995, 1999, 2000, 2004, 2006, 2008, 2011, and 2023 to revise existing groundwater standards, establish new standards, and clarify rule language. There are now groundwater quality standards in ch. NR 140 for 139 substances of public health concern, 8 substances of public welfare concern, and 14 indicator parameters.

Substances of public health concern are regulated using groundwater quality standards. In accordance with ch. 160, Wis. Stats., groundwater ESs for substances of public health concern are established based on recommendations received from DHS. Groundwater PALs for substances of public health concern are set at either 20% of the concentration of the established ES or at 10% of the concentration of the established ES if the substance has carcinogenic, mutagenic, or teratogenic properties or interactive effects.

In 2019, the department initiated rulemaking for multiple contaminants — including pesticides, PFAS, and metals — during Cycle 10 under SS 090-19. The Natural Resources Board (NRB) did not approve the proposed groundwater standards under SS 090-19.

In 2021, during Cycle 11, the department initiated a new rulemaking process under SS 029-21 to establish groundwater standards for several substances, including PFAS and some pesticide compounds. SS 029-21 expired on September 15, 2023.

The department is addressing concerns associated with previous rulemaking efforts by separating the substances into different contaminant groups. In 2025, the department initiated a rulemaking for establishing groundwater standards for PFAS (SS 008-25). This rulemaking is still ongoing.

Ten substances addressed during Cycles 10 and 11 are included again in the current scope statement: Clothianidin, Glyphosate, Imidacloprid, Isoxaflutole, Isoxaflutole DKN, Sulfentrazone, Thiamethoxam, Chlorantraniliprole, Fomesafen, and Metalaxyl. In addition, eleven new substances have been added to the current scope statement based on updated data not previously available. These substances are Boscalid; Chlorothalonil; 4-hydroxy-2,5,6-trichloroisophthalonitrile; Cyantraniliprole; Dimethenamid ESA; Dimethenamid OA; Dinotefuran; Hydroxyatrazine; Metribuzin DA; Metribuzin DADK; and Sulfentrazone 3-carboxylic acid.

This proposed rule will add individual ESs and PALs to s. NR 140.10, Table 1, Wis. Adm. Code, for several pesticide substances. These standards will be based on the 2026 DHS recommendations.

Policy alternatives

Section 160.07 (5), Wis. Stats., directs the department to propose rules establishing groundwater standards based on DHS recommendations for substances of public health concern. During the rulemaking process, the department may adopt or modify the proposed standards, based on public input on the proposed standards. One alternative would be to not complete the rulemaking process for these substances of public health concern. Without numeric health-based standards, groundwater regulatory programs will not be sufficiently protective of the public health of Wisconsin residents for pesticides of known concern.

4. Detailed explanation of statutory authority for the rule (including the statutory citation and language):

The DNR's statutory authority to establish state groundwater quality standards is contained in ss. 160.07 (5), 160.15 (1), 160.19, 281.15, and 281.19 (1), Wis. Stats.

Chapter 160, Wis. Stats., establishes an administrative process for developing numeric 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 DNR to use this administrative process to establish numeric groundwater quality standards for substances of public health or welfare concern that are found in or have a reasonable probability of entering the groundwater resources of the state. Sections 160.07 (5) and 160.15 (1), Wis. Stats., require the department to propose rules to establish enforcement standards and preventive action limits based on DHS recommendations.

After the department promulgates groundwater standards, s. 160.19, Wis. Stats., requires regulatory agencies to review existing rules that regulate activities, practices, and facilities to ensure compliance with new groundwater standards.

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.

5. Estimate of amount of time that state employees will spend developing the rule and of other resources necessary to develop the rule:

The department estimates that approximately 1,000 hours of staff time will be required to complete the proposed rule.

6. List with description of all entities that may be affected by the proposed rule:

The proposed groundwater standards would apply to all regulated facilities, practices, and activities related to the pesticides listed in Table 1 that may impact groundwater quality.

Once adopted, the numeric groundwater standards for the pesticides listed in Table 1, become the criteria for protecting public health, and could affect the following activities:

- Spills and remediation sites. Facilities and other entities that store, handle, or otherwise manage the pesticides listed in Table 1 and that are responsible for a release or spill will be required to clean up any affected sites in accordance with applicable groundwater standards.
- Pesticide use. This rulemaking will not, by itself, restrict pesticide use. However, pesticide use could be subject to future limitations if DATCP initiates subsequent rulemaking.

7. Summary and preliminary comparison with any existing or proposed federal regulation that is intended to address the activities to be regulated by the proposed rule:

Chapter 160, Wis. Stats., establishes the administrative process for developing numeric state groundwater quality standards for substances of public health concern. Section 160.07 (4), Wis.

Stats., provides DHS a hierarchy of other regulatory numbers to which it must look when creating recommendations for state groundwater quality. Under this framework, DHS must base its groundwater standard recommendations on existing “federal numbers,” as defined in ch. 160, Wis. Stats. Federal numbers include Maximum Contaminant Levels (MCLs), Health Advisories (HAs), and established federal cancer risk levels. When no federal number exists for a substance, DHS relies on reference doses (RfDs) or acceptable daily intake (ADI) values to derive recommended groundwater standards.

For the substances included in Table 1, federal numbers exist for only two compounds:

- Chlorothalonil has a federal one-day and ten-day Health Advisory of 0.2 mg/L for a 10-kg child, established in the early 1980s. There is no federal MCL or lifetime Health Advisory for this compound.
- Glyphosate has a federal MCL of 0.7 mg/L, established in the early 1990s.

While federal numbers do not exist for other substances in Table 1, ch. 160, Wis. Stats., grants the department authority to establish groundwater standards for substances that are detected in or have a reasonable probability of entering groundwater resources. To the department’s knowledge, all compounds listed in Table 1 have been detected in Wisconsin groundwater. Section 160.07, Wis. Stats., further provides provisions to the DHS for recommending enforcement standards when no federal numbers exist.

8. Anticipated economic impact of implementing the rule (note if the rule is likely to have an economic impact on small businesses):

The department anticipates that the economic impact of this rule will be likely minimal, and that there will be no economic impact on small businesses. The department will further examine the economic impact of the proposed rule when the rule is developed.

State groundwater quality standards protect both public health and welfare. There may be cost savings in reducing the exposure to these known substances of public health concern. Human health impacts and drinking water treatment system costs to remove contamination may be avoided when groundwater pollution is reduced or eliminated. Adoption of groundwater quality rules and regulations by state regulatory programs minimizes the concentrations of polluting substances in groundwater and minimizes water treatment system costs and health care costs, while safeguarding public health and welfare.

9. Anticipated number, month and locations of public hearings:

The department anticipates holding one public hearing in spring 2027 on the proposed rule language. The department will hold the hearing virtually to allow as many people to attend as possible. Comments may be provided by mail, phone, and email as well as during the hearing.

Contact Person:

Dr. Carla Romano, (608) 910-3458, carla.romano1@wisconsin.gov

Signature:

Steven Little, Deputy Secretary
For Karen Hyun, Ph.D., Secretary

Date Approved