DRAFT PREPARED FOR:
Solicitation Notice for Comments Regarding an Economic Impact Analysis (EIA)

The statement of scope for this rule, SS 064-16, was approved by the Governor on July 13, 2016, was published in Register No. 727 A3 on July 18, 2016, and was approved by the Natural Resources Board on August 3, 2016.

ORDER OF THE STATE OF WISCONSIN NATURAL RESOURCES BOARD CREATING RULES

The Wisconsin Natural Resources Board proposes to **create** NR 151.015 (2), (7m), (8c), (8g), (8l), (8p), (8t), (8x), (15n), (15w), (17), (18r), NR 151.075, and NR 243.143 relating to runoff management and non-point source performance standards and Concentrated Animal Feeding Operation (CAFO) rule revisions to incorporate by reference those performance standards, and affecting small business.

WT-15-16

Analysis Prepared by the Department of Natural Resources

1. Statutes Interpreted: ss. 281.15, 281.16 and 283.31, Wis. Stats.

2. Statutory Authority: ss. 281.16(3)(a), 283.11, 283.31, 160.19 and 227.11(2)(a), Wis. Stats.

3. Explanation of Agency Authority: Pursuant to s. 281.15, Wis. Stats., the department shall set water quality standards to be applicable to the waters of the state. Those water quality standards appear in chs. NR 102 through NR 105, Wis. Adm. Code, for surface water quality standards and ch. NR 140, Wis. Adm. Code, for groundwater quality standards.

Pursuant to s. 281.16(3)(a), Wis. Stats., the department, in consultation with the department of agriculture, trade and consumer protection (DATCP), is directed to promulgate by rule performance standards and prohibitions for agricultural facilities and agricultural practices that are designed to comply with state surface water quality standards and groundwater quality standards. Chapter NR 151, Wis. Adm. Code, establishes, among other things, performance standards and prohibitions for agricultural facilities and practices designed to achieve water quality standards.

Pursuant to ss. 283.11 and 283.31(3), Wis. Stats., the department is authorized to promulgate rules to administer the WPDES permit program and to include conditions in WPDES permits that are necessary to achieve compliance with surface water and groundwater quality standards.

Pursuant to s. 160.19, Wis. Stats., authorizes the department to promulgate rules for facilities, activities and practices affecting groundwater which are designed to minimize the level of substances in groundwater and to maintain compliance with preventive action limits for groundwater standards to the extent technically and economically feasible. Section 160.19(4), Wis. Stats., directs the agency to review and revise its rules, if necessary, to achieve the objectives of s. 160(19)(2) and (3), Wis. Stats., regarding compliance with preventive action limits and enforcement standards.

Pursuant to s. 227.11(2)(a), Wis. Stats., the department has general authority to promulgate rules to administer the specific statutory authority granted in chs. 281 and 283, Wis. Stats.

4. Related Statutes or Rules: Section NR 151.004, Wis. Adm. Code, authorizes the department to promulgate targeted performance standards if statewide performance standards and prohibitions are

insufficient to achieve surface water and groundwater quality standards in the defined targeted areas and targeted performance standards would attain surface water and groundwater quality standards in those areas.

Section NR 151.002(33), Wis. Adm. Code, defines a "performance standard" as a narrative or measurable number specifying the minimum acceptable outcome for a facility or practice.

Section NR 151.002(44), Wis. Adm. Code, defines "targeted performance standard" as a performance standard that will apply in a specific area, where additional practices beyond those contained in ch. NR 151 are necessary to meet water quality standards.

The department has found that in Silurian bedrock areas of Wisconsin, water quality standards or groundwater standards will not be attained using statewide performance standards and prohibitions but the implementation of targeted performance standards would attain water quality standards or groundwater standards. The proposed rules contain targeted performance standards.

Pursuant to s. 281.16(3), Wis. Stats, DATCP shall develop or specify the best management practices, conservation practices or technical standards used to demonstrate compliance with a performance standard developed under s. NR 151.004, Wis. Adm. Code. Section NR 151.002(45), defines "technical standard" as a document that specifies design, predicted performance and operation and maintenance specifications for a material, device or method. The department has consulted with DATCP in the development of the proposed rules and DATCP is expected to promulgate its related implementation rules in ch. ATCP 50, Wis. Adm. Code, Soil and Water Resource Management Program.

Chapter NR 243, Wis. Adm. Code, regulates Concentrated Animal Feeding Operations (CAFOs), which are farms required to obtain a Wisconsin Pollutant Discharge Elimination System (WPDES) permit under s. 283.31(3), Wis. Stats.

Section 283.31, Wis. Stats., provides authority to include terms and conditions in a WPDES permit to comply with water standards, ground water standards and federal requirements.

Section 283.13(5), Wis. Stats., provides authority to include more stringent limitations in WPDES permits when necessary to meet water quality standards or other federal or state requirements.

Section 92.15(2), Wis. Stats., provides that a local unit of government may enact regulations of livestock operations that are consistent with and do not exceed the performance standards, prohibitions, conservation practices and technical standards under s. 281.16(3), Wis. Stats.

Section 281.16(3)(e), Wis. Stats., provides that an existing facility is not required to comply with the agricultural performance standards or prohibitions unless cost sharing is made available.

Section 281.16(3)(e), Wis. Stats., states that the department shall promulgate criteria for determining whether cost sharing is available under s. 281.65, Wis. Stats.

Section 281.65(1), (4)(e) and (8), Wis. Stats., provides authority for the department to promulgate rules regarding eligible costs related to compliance with agricultural nonpoint source performance standards, specifications and best management practices.

Chs. NR 153 and 154, Wis. Adm. Code, identify grant programs, best management practices and cost share conditions to implement the performance standards in ch. NR 151, Wis. Adm. Code.

5. Plain Language Analysis: The department has found that, in areas of the state where Silurian bedrock

is present, groundwater and surface water standards will not be attained by implementing the statewide agricultural performance standards and prohibitions in ch. NR 151, Wis. Adm. Code. This is because Silurian bedrock has the capacity to allow rapid transport of contaminants without attenuating those contaminants. Silurian bedrock is located in the eastern portions of the state, including areas in Brown, Calumet, Dodge, Door, Fond du Lac, Kenosha, Kewaunee, Manitowoc, Milwaukee, Outagamie, Ozaukee, Racine, Walworth, Washington and Waukesha counties.

This rule identifies "Silurian bedrock" as the targeted area where certain rock formations are overlain by soils of 20 feet or less and establishes performance standards that will apply. The performance standards in the proposed rule are designed to minimize the risk for pathogen delivery to groundwater. Within the Silurian bedrock area, the rule sets forth manure spreading rates and practices that vary according to the soil depth and texture. The most restrictive practices apply to those limited areas of the highest risk for pathogen delivery. Less restrictive requirements apply in areas with 5 to 20 feet to bedrock.

Before mechanically applying manure in the Silurian bedrock area, the proposed rule requires a farmer to verify the depth of soils to bedrock where County soil maps provide an initial indication of less than 5 feet of depth to bedrock. The farmer's field verification will establish the boundary of areas where the depth is less than 5 feet and what that depth actually is. This will determine which practices the farmer will need to employ to apply manure on those fields. The methodology to verify depth to bedrock (such as number of borings per acre, time of year taken, etc.) or tools available for this effort is a technical standard, and so will be developed by DATCP rather than DNR. Representatives from DATCP have worked closely with the department in the development of this rule and DATCP is expected to promulgate in ch. ATCP 50 the best management practices, conservation practices or technical standards used to demonstrate compliance with this rule.

CAFOs in the Silurian bedrock areas will be required to comply with the standards in the rule through their WPDES permit, regardless of any local ordinance and absent cost sharing. Large CAFOs are not eligible for cost sharing under chs. NR 153 and 154, but are required to comply with the livestock performance standards in NR 151. A cross reference to the targeted performance standard language will be added to ch. NR 243, Wis. Adm. Code.

Non-permitted farms in Silurian bedrock areas will be required to comply with the standards in the rule in certain limited situations. Where construction of appropriate best management practices is needed for compliance and those practices are eligible for cost share under chs. NR 153 and NR 154, Wis. Adm. Code, non-permitted farms will be required to comply only where cost share is offered. Certain practices are not eligible for cost share under chs. NR 153 and 154, Wis. Adm. Code. Non-permitted farms may be required to adopt certain changes absent cost share if a local unit of government adopts a local ordinance requiring farms to adopt changes consistent with the rule.

6. Summary of, and Comparison with, Existing or Proposed Federal Statutes and Regulations: The federal government does not directly regulate discharges to groundwater in Silurian bedrock areas.

7. Comparison with Similar Rules in Adjacent States: Adjacent states have manure spreading setback requirements where those states have identified specific sites sensitive to groundwater contamination that are present in those states. The proposed Silurian bedrock characteristics identified in the proposed rule definition as a targeted performance standard area are based on the particular characteristics present in Wisconsin's Silurian bedrock.

8. Summary of Factual Data and Analytical Methodologies Used and How Any Related Findings Support the Regulatory Approach Chosen: The department convened a Technical Advisory Committee to discuss current NR 151 performance standards and groundwater conditions in sensitive areas, including Silurian bedrock areas of the state. The department identified Silurian bedrock as highest

priority as a targeted performance standard area.

9. Analysis and Supporting Documents Used to Determine the Effect on Small Business or in Preparation of an Economic Impact Report: The department has prepared a preliminary draft Economic Impact Analysis that includes cost estimates based on available cost data.

10. Effect on Small Business (initial regulatory flexibility analysis): The department's draft Economic Impact Analysis includes information on the effect on small business. In discussions with the Technical Advisory Committee, the department considered how the impact on small business could be reduced. The proposed rules allow flexibility for farmers and options for achieving compliance with the targeted performance standards.

11. Agency Contact Person: Mike Gilbertson, Water Resources Management Specialist, Wisconsin Department of Natural Resources, P.O. Box 7921, WT/3, Madison, Wisconsin 53707, mike.gilbertson@wisconsin.gov.

SECTION 1. NR 151.015(2) is created to read:

NR 151.015**(2)** "Closed depression" means a topographical basin where water ponds to a seasonal high water mark, has no external drainage, and drainage may occur either through direct conduits to groundwater or low areas where water ponds and infiltrates into the groundwater. Closed depressions may be identified using topographic maps and visual interpretation, ArcGIS tools, or other methods.

SECTION 2. NR 151.015(7m) is created to read:

NR 151.015**(7m)** "Established crop" means a growing annual crop, double crop or cover crop that provides vegetative cover of the soil.

SECTION 3. NR 151.015(8c) is created to read:

NR 151.015**(8c)** "Incorporation" has the meaning given in s. NR 243.03(28).

SECTION 4. NR 151.015(8g) is created to read:

NR 151.015**(8g)** "Infield bedrock verification" means determining bedrock depth using available data including, but not limited to well construction reports, location of drill cores or other subsurface investigations, location of quarries and natural bedrock outcrops, geophysical investigations, and uneven crop growth patterns indicating fracture traces in the field.

SECTION 5. NR 151.015(8l) is created to read:

NR 151.015**(8l)** "Injection" has the meaning given in s. NR 243.03(29).

SECTION 6. NR 151.015(8p) is created to read:

NR 151.015**(8p)** "Liquid manure" means manure that contains less than 12 percent solid material by volume.

SECTION 7. NR 151.015(8t) is created to read:

NR 151.015**(8t)** "Long term no till" means no till farming that has been implemented a minimum of 3 consecutive years.

SECTION 8. NR 151.015(8x) is created to read:

NR 151.015**(8x)** "Mechanical application" means surface application, injection or incorporation of manure on cropland or pastures using manure hauling vehicles or equipment. This does not include an area of land where animals graze or otherwise seek feed in a manner that maintains the vegetative cover over all the area and where the vegetative cover is the primary food source for the animals.

SECTION 9. NR 151.015(15n) is created to read:

NR 151.015**(15n)** "Pathogens" has the meaning given in s. NR 204.03(38).

SECTION 10. NR 151.015(15w) is created to read:

NR 151.015**(15w)** "Pre-tillage" means using mechanical equipment to reduce soil preferential flow paths (worm holes, root holes and cracks) by turning and mixing the soil prior to and at least 2 inches below the depth of manure application.

SECTION 11. NR 151.015(17) is created to read:

NR 151.015**(17)** "Silurian bedrock" means the area in Wisconsin where the bedrock consists of Silurian dolomite or is part of the Maquoketa Formation overlain by soils of 20 feet or less. This area comprises portions of the following counties: Brown, Calumet, Dodge, Door, Fond du Lac, Kenosha, Kewaunee, Manitowoc, Milwaukee, Outagamie, Ozaukee, Racine, Sheboygan, Walworth, Washington and Waukesha. Areas where Silurian bedrock occurs in Wisconsin can be identified by the most current NRCS, WGNHS, or county maps and infield bedrock verification methods.

SECTION 12. NR 151.015(18r) is created to read:

NR 151.015**(18r)** "Solid manure" means manure that contains 12 percent or greater solid material by volume.

SECTION 13. NR 151.075 is created to read:

NR 151.075 Silurian bedrock performance standards. (1) All crop producers and livestock producers that mechanically apply manure directly or through contract or other agreement to cropland or pasture areas that meet the definition of Silurian bedrock under s. NR 151.015(17) shall comply with this section.

(2) Manure application shall not cause the fecal contamination of water in a well.

(3) No mechanical application of manure on areas of cropland or pastures that have 24 inches or less of separation between the ground surface and saturation.

(4) Manure shall be applied in conformance with a nutrient management plan that meets the requirements under all of the following:

(a) The plan shall be consistent with s. NR 151.07.

(b) The plan shall be consistent with NRCS Technical Standard 590, dated December 2015.

(c) The plan shall be designed and implemented consistent with this section to manage manure so as to reduce the risk of pathogen delivery to groundwater and prevent exceedances of groundwater water quality standards.

(d) The plan shall use county soils or other methods as a planning tool to identify Silurian bedrock within or adjacent to cropland and pastures.

(5) Prior to mechanical application of manure on croplands or pastures, use infield bedrock verification to locate Silurian bedrock having soil depths less than 5 feet.

(6) For cropland or pastures, when soil is less than five feet thick over Silurian bedrock, evaluate and rank fields for risk of pathogen delivery to groundwater before mechanically applying manure. Areas determined to have a high risk for pathogen delivery to groundwater shall be avoided or shall be lowest priority for manure application.

(7) Mechanical application of manure and headland stacking of manure is prohibited on soils with 5 feet or less to Silurian bedrock when soils are frozen or snow covered.

(8) Mechanical application of manure is prohibited within Silurian bedrock having soil depths less than 5 feet when rainfall greater than one inch is forecast within 24 hours of planned application.

(9) Mechanical application of manure is prohibited for soils with less than 2 feet to Silurian bedrock.

(10) For soils with 2 to 3 feet to Silurian bedrock, the following shall apply:

(a) No mechanical application of solid manure unless:

1. Incorporated within 72 hours to no more than 4 inches below ground; and

2. At least one of the following is implemented:

a. Manure is applied at a rate of 15 tons/acre/year, or UW A2809 annual application rate, whichever is less.

b. Manure is applied within 10 days of the planting date or applied on perennial or other established crop.

c. Manure is composted or treated to reduce pathogen levels via practices to a fecal coliform bacteria density of less than 500,000 colony-forming units, or most probable number per gram total solids on a dry weight basis.

(b) No mechanical application of liquid manure unless:

1. Pre-tillage is completed, unless exempt under sub. (c); and

2. Liquid manure is injected or incorporated within 24 hours to no more than 4 inches below ground; and

3. At least one of the following is implemented:

a. Total liquid manure application is limited to Table 1 or to the UW A2809 annual application rate, whichever is less, to prevent hydraulic overloading of the soil.

Table 1. Silurian Bedrock Maximum Liquid Manure Application Rates

Soil Texture	**2 to 3 Feet Depth (gal/ac/yr)**	**3 to 5 Feet Depth (gal/ac/wk)**	**5 to 20 Feet Depth (gal/ac/wk)**
Sand	6,750	6,750	13,500
Sandy Loam	13,500	13,500	27,000
Loam	13,500	13,500	27,000
Silt Loam	13,500	13,500	27,000
Clay Loam	13,500	13,500	20,000
Clay	6,750	6,750	13,500

b. Liquid manure is applied within 10 days of the planting date or applied on perennial or other established crop.

c. Liquid manure is treated to substantially reduce pathogen levels via practices to a fecal coliform bacteria density of less than 500,000 most probable number or colony-forming units per 100 milliliter sample.

(c) Pre-tillage or incorporation is not required if cropland or pastures meet long term no till or have perennial or established crops.

(11) For soils with 3 to 5 feet to Silurian bedrock, the following shall apply:

(a) No mechanical application of solid manure unless:

1. Incorporated within 72 hours to no more than 6 inches below ground; and

2. At least one of the following is implemented:

a. Manure is applied at a rate of 15 tons/acre/year, or UW A2809 annual application rate, whichever is less.

b. Manure is applied within 10 days of the planting date or applied on perennial or other established crop.

c. Manure is composted or treated to reduce pathogen levels via practices to a fecal coliform bacteria density of 500,000 colony-forming units, or most probable number per gram total solids on a dry weight basis.

(b) No mechanical application of liquid manure unless:

1. Pre-tillage is completed unless exempt under sub. (c); and

2. Liquid manure is injected or incorporated within 24 hours to no more than 6 inches below ground; and

3. At least one of the following is implemented:

a. Total liquid manure application is limited to sub. (10)(b)3. Table 1 rates or to the UW A2809 annual application rate, whichever is less, to prevent hydraulic overloading of the soil.

b. Liquid manure is applied within 10 days of the planting date or applied on perennial or other established crop.

c. Liquid manure is treated to substantially reduce pathogen levels via practices to a fecal coliform bacteria density of less than 500,000 most probable number or colony-forming units per 100 milliliter sample.

(c) Pre-tillage or incorporation is not required if cropland or pastures meet long term no till or has perennial or established crops.

(12) For soils with 5 to 20 feet to Silurian bedrock, the following shall apply:

(a) No mechanical application of liquid manure unless:

1. Pre-tillage is completed unless exempt under sub. (b); and

2. Liquid manure is injected or incorporated within 24 hours to no more than 8 inches below ground; and

3. At least one of the following is implemented:

a. Total weekly liquid manure application is limited to sub. (10)(b)3. Table 1 rates, or to the UW A2809 annual application rate, whichever is less, to prevent hydraulic overloading of the soil.

b. Liquid manure is applied within 10 days of the planting date or applied on perennial or other established crop.

c. Liquid manure is treated to substantially reduce pathogen levels via practices to a fecal coliform bacteria density of less than 500,000 most probable number or colony-forming units per 100 milliliter sample.

(b) Pre-tillage or incorporation is not required if cropland or pastures meet long term no till, or has perennial or established crops.

(13) Mechanical manure applications are prohibited within:

(a) 1000 feet of a community water system as defined in s. NR 811.02.

(b) 250 feet of a private water system and non-community water system as defined in s. NR 812.07.

(c) An area within 300 feet upslope or 100 feet downslope of a direct conduit to groundwater.

(d) 100 feet of defined channels that lead to sub. (a), (b), or (c).

(14) Mechanical manure applications are prohibited within 100 feet of an area in a closed depression unless the manure is injected or incorporated within 24 hours or prior to a rain event, whichever comes first. This does not apply to areas following long term no till practices or with perennial or established crops.

(15) No surface application of manure on slopes of 6 percent or greater in cropland and pasture areas that have defined channels that drain to a closed depression, unless the material is incorporated within 24 hours. This does not apply to areas following long term no till practices or with perennial or established crops.

(16) Practices shall retain land applied manure on the soil where they are applied with minimal movement to maintain setback distances specified in subs. (13) and (14).

SECTION 14. NR 243.143 is created to read:

NR 243.143. Silurian bedrock performance standards. Owners or operators that mechanically apply manure directly or through contract or other agreement to cropland or pasture areas that meet the definition of Silurian bedrock under s. NR 151.015(17) shall comply with s. NR 151.075.

SECTION 15. 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 16. BOARD ADOPTION. This rule was approved and adopted by the State of Wisconsin Natural Resources Board on [DATE].