State of Wisconsin
Governor Tony Evers

Department of Agriculture, Trade and Consumer Protection
Secretary Randy Romanski

Wisconsin Administrative Code Chapter ATCP 51
Technical Expert Committee Agenda

01/27/2023

The Department of Agriculture, Trade and Consumer Protection (DATCP) will meet on January 27, 2023. DATCP will hold its official business at 9:00 am via Zoom. To attend the meeting remotely, use the following Zoom hyperlink: https://www.zoomgov.com/j/1601563514?pwd=Ykl6eVh2VnRKYVRJb0VtMEdlVEJBQT09, meeting ID: 160 156 3514, passcode: 880535. The agenda for the meeting is shown below.

AGENDA ITEMS AND TENTATIVE SCHEDULE:

1 Call the Meeting to Order – **DATCP staff**
- a. Roll Call
- b. Open meeting notice
- c. Introductions
- d. Review Minutes of 2022 - 2023 Technical Expert Committee Introductory Meeting

2 Review nutrient management technical standard
NRCS 590 (Sept 2005) and new developments in the standard
- a. Background on standard - **DATCP Staff**
- b. Previous recommendations - **DATCP Staff**
- c. Discuss current standard
- d. Formulate recommendations

3 Planning for next TEC meeting - DATCP Staff
Waste storage and runoff management technical standards

4 Adjourn

MINUTES
LIVESTOCK FACILITY SITING TECHNICAL EXPERT COMMITTEE

December 22, 2022
ZoomGov Meeting

Item #1 Call to Order—Roll Call, Open Meeting Notice, Introductions

Call to Order

The Livestock Facility Siting Technical Expert Committee (Committee) met via videoconference on **December 22, 2022**. The meeting was preceded by public notice as required by Wis. Stat. § 19.84. The meeting was called to order at **9:00 am**.

Members Present

Members: Scott Frank, Nikki Wagner, Travis Drier, Emily Micolichek, AV Roth, Jay Heeg, Mike Koles, Matt Zangl and Gaylord Olson were present.

Staff: Tim Jackson, Tim Anderson and Katy Smith of DATCP were present.

Members of the 2022-2023 Livestock Siting Technical Expert Committee formally introduced themselves.

- **Scott Frank**, Shawano County Conservationist- has worked in Shawano County for 27 years, 24 years in the Land Conservation Department, with experience as a Technician and Conservationist overseeing all aspects of the Department. Frank oversees the review and approval process for the County's Livestock Facility Licensing Ordinance and has experience in review with respect to waste storage and waste transfer planning, design and construction inspection, feedlot runoff, evaluating sites as well as inspection to address runoff issues, and nutrient management plan review and SnapPlus.
- **Nikki Wagner**, Rock River Labs- is a Certified Crop Advisor (CCA) with 15 years of experience in nutrient Management. Wagner primarily works with concentrated animal feeding operations (CAFOs) for Rock River Labs, assists with projects related to Wisconsin Pollutant Discharge Elimination System (WPDES) permitting and has experience with rewriting the Wisconsin NRCS 590 Standard (2015).
- **Travis Drier,** Nutrient Management Specialist, Dunn County Land and Water Conservation Division- Drier is a CCA. Drier has been with Dunn County for 5 years and previously worked for Pepin County. In his current role, Drier teaches SnapPlus, reviews nutrient management plans for regulatory programming such as manure storage or permitting, works with farmland preservation conservation compliance, works on Dunn County's waste storage ordinance and completes farm reviews and manure storage structure reviews.
- **Emily Micolichek, Agricultural Engineer, Miller Engineers and Scientists-** Micolichek is the Agricultural Department Manager for Miller Engineers and Scientists and has a decade of agricultural design experience, including working with permitting for county and state regulations, such as WPDES and Livestock Facility Siting ordinances.
- **AV Roth, Hog Producer-** Roth is a hog producer in Crawford County. Roth has served on past and present National Pork Producers Councils, is Vice President of the Wisconsin Pork

Producer Association and is a member of Farm Bureau. Roth has been engaged with livestock facility siting regulation since 2008.

- **Jay Heeg, Dairy Producer-** Heeg is a dairy producer in Marathon County, farms with two brothers and two nephews milking about 1250 cows, raising about 1100 heifers and farming about 3300 acres. Heeg's farm has a WPDES permit. Heeg has previously served on the Board of Directors for the Professional Dairy Producers of Wisconsin, the Wisconsin Beef Council and currently serves on the Beef Quality Assurance Advisory Committee.
- **Matt Zangl, Director, Jefferson County Department of Planning and Zoning-** Zangl has been with the Department for about 8 years. His Department reviews livestock facility siting permit applications in coordination with the Jefferson County Land and Water Conservation Department. Jefferson County's livestock facility siting regulation is administered through zoning and permitting is triggered at 150 animal units.
- **Gaylord Olson, III, County Conservationist, Jackson County Land Conservation Department-** Olson has been with Jackson County since 1984 and in the County Conservationist role since 1986. Olson administers a number of county regulatory ordinances including non-metallic mining, manure storage and livestock siting. Jackson County's livestock facility siting regulation is administered through licensing.
- **Mike Koles, Executive Director, Wisconsin Towns Association-** Koles has been with the Association for 10 years, representing the interests of all of the town governments in the state. Prior to his role at the Wisconsin Towns Association, Koles was a UW-Extension educator for about 15 years and was a member of the training team responsible for outreach and education after the Livestock Facility Siting rule was first promulgated.

Note: Curis Hedman, Phd., Wisconsin Department of Health Services, representing environmental science, was unavailable for the December 22, 2022 meeting of the Livestock Facility Siting Technical Expert Committee.

Item #2 Program, statute and rule overview, review rule review process and expectations

Tim Jackson, DATCP delivered a presentation that reviewed the Livestock Facility Siting program, statute (s. 93.90, Wis. Stats.), administrative rule (ATCP 51) as well as projected rule review processes and expectations. The presentation is available on the Livestock Facility Siting Technical Expert Committee's webpage.

Item #3 Preparing for the Next Meeting

Jackson advised the committee that the next meeting would focus on review of the Livestock Facility Siting Nutrient Management Standard (ATCP 51.16, Wis. Admin Rule, ATCP 51, Appendix A, Worksheet 3). The committee should expect a survey of their availability for the week of January 23-27th during the last week of December. A packet of materials for the committee to prepare, including an agenda and discussion guide, will be sent at least one week in advance of the scheduled meeting.

The meeting was adjourned at 9:44 am.

ply with the standard in sub. (1) does not constitute evidence of a public or private nuisance, negligence, or a taking of property.

Odor control practices may also control air pollution emissions. The department will work to coordinate odor and air emissions field research with DNR, the Wisconsin agricultural stewardship initiative (WASI), and the University of Wisconsin. The department will consider research results when it reviews this chapter at least once every 4 years (see s. 93.90 (2) (c), Stats.). As part of its review, the department will consult with an advisory committee that includes representatives of livestock producers, local government and environmental interests. The department will consider amendments to this rule, as appropriate, based on research findings.

(2) EXEMPTIONS. The odor standard in sub. (1) does not apply to any of the following livestock facilities unless the facility operator voluntarily completes and submits *worksheet 2* or the equivalent spreadsheet output with the operator's application for local approval:

(a) A new livestock facility with fewer than 500 animal units.

(b) An expanded livestock facility with fewer than 1,000 animal units.

(c) A livestock facility in which all livestock structures will be located at least 2,500 ft. from the nearest affected neighbor.

Note: "Affected neighbors" (ATCP 51.01 (2)) are residences or "high–use buildings" (ATCP 51.01 (16)) *other than* those owned by the livestock operator or by persons who agree to be excluded from odor score calculations under sub. (1).

(3) CLUSTERS. If all of the livestock structures in a livestock facility are divided among 2 or more clusters, such that no cluster is located closer than 750 feet to any other cluster, an operator may choose to calculate an odor score under sub. (1) for each cluster rather than for the entire livestock facility. Each cluster shall comply with the odor standards in sub. (1).

Note: For example, a dairy operator can take advantage of sub. (3) if a proposed dairy facility includes a milking operation (cluster 1) and a heifer facility (cluster 2) located 800 feet from each other.

(4) LOCAL DISCRETIONARY CREDIT. (a) Notwithstanding sub. (1), a political subdivision may in its discretion approve a livestock facility with an odor score of less than 500, provided that the odor score is not less than 470.

(b) If a political subdivision exercises its discretionary authority under par. (a), its written decision under s. ATCP 51.34 (3) shall state the reason or reasons for that exercise of discretionary authority.

(c) The livestock facility siting review board may not review any of the following under s. 93.90 (5), Stats.:

1. A political subdivision's exercise, or refusal to exercise, discretionary authority under par. (a).

2. The adequacy of the political subdivision's stated reasons under par. (b) for exercising discretionary authority under par. (a).

Note: A political subdivision *must* approve a livestock facility that meets the odor standard under sub. (1), assuming that the facility meets other livestock facility siting standards under this chapter (*see* ATCP 51.34 (1)).

A political subdivision may *not* approve a livestock facility that fails to meet the odor standard under sub. (1), except that the political subdivision may exercise its discretionary authority under sub. (4) (a) in favor of an applicant if it chooses to do so. For example, a political subdivision may exercise its discretionary authority under sub. (4) (a) based on factors such as community tolerance, the applicant's near attainment of a standard, innovative odor control practices, local land use plans, or the applicant's past reputation for good management and community relations.

(5) CREDITS FOR ODOR CONTROL PRACTICES. In the calculation of predicted odor under sub. (1), an operator may claim credit for all of the following:

(a) Odor control practices, identified in *Appendix A, worksheet 2*, which the operator agrees to implement. For each odor control practice, the operator may claim a credit specified in *Appendix A, worksheet 2*.

(b) An odor control practice not identified in *Appendix A, worksheet 2* if the department pre–approves a credit for that practice. The operator shall claim the pre–approved credit according to the procedure specified in *Appendix A, worksheet 2*.

(c) An operator seeking department approval under par. (b) shall submit all of the following to the department in writing:

1. A clear description of the odor control practice for which the operator seeks an approved credit.

2. Scientific evidence to substantiate the efficacy of the odor control practice under relevant conditions.

(d) The department may approve a credit for an odor control practice under par. (b) if, in the department's opinion, there is adequate scientific evidence to show that under relevant conditions the practice will result in odor reduction commensurate with the approved credit. The department shall grant or deny the request within 90 days after the department receives the request.

Note: An odor control practice credit under sub. (5) is expressed, in the odor score calculation in *Appendix A, worksheet 2*, as a multiplier value (the *lower* the multiplier, the greater the benefit to the livestock operator).

(6) FUTURE REFERENCE POINTS. (a) Whenever an operator seeks local approval for the expansion of a livestock facility previously approved under this chapter, the operator may calculate an odor score under sub. (1) by reference to the same affected neighbors referenced in the odor score calculation for the prior local approval. The operator is not required to include, in the new odor score calculation, an affected neighbor that was not referenced in the odor score calculation for the prior local approval.

(b) Paragraph (a) applies regardless of any change in ownership of the livestock facility since the prior local approval, and regardless of the amount of time that has passed since the prior local approval, provided that the prior local approval has not been lawfully withdrawn for good cause under s. ATCP 51.08 (2) or 51.34 (4) (b).

Note: The odor score calculation in *Appendix A, worksheet 2* is partly based on the proximity and density of "affected neighbors" (*see* ATCP 51.01 (2)). An application for local approval documents those "affected neighbor" reference points. Subsection (6) protects an operator against the effects of encroaching development, without regulating that development directly.

A local government must keep a complete record of each local approval for at least 7 years, and must file with DATCP a copy of each approval (including the application on which it was based). The local government must also provide the livestock operator with documentation of the local approval, including the maps on which the approval was based (*see* s. ATCP 51.34 (3) (b)). The approved maps document the "odor score" reference points for purposes of sub. (6).

The livestock operator can record the local approval (including mapped "odor score" reference points) with the local register of deeds, and can convey the documentation to subsequent purchasers. In those ways, an operator can document previously–approved "odor score" reference points for purposes of a subsequent expansion.

(7) PRESUMPTION. For purposes of local approval, a livestock facility is presumed to comply with this section if the application for local approval complies with s. ATCP 51.30.

Note: Under s. ATCP 51.30, an application must be complete, credible and internally consistent. The application must include, among other things, a worksheet (or equivalent spreadsheet output) that shows compliance with this section. *See Appendix A, worksheet 2*. Local approval is conditioned upon compliance in fact (*see* s. ATCP 51.34 (4)). The presumption in sub. (7) may be rebutted by clear and convincing evidence in the record (*see* s. ATCP 51.34 and 51.36).

History: CR 05–014: cr. Register April 2006 No. 604, eff. 5–1–06.

ATCP 51.16 Nutrient management.

(1) NUTRIENT MANAGEMENT STANDARD. (a) Except as provided in par. (c):

1. Land applications of waste from a livestock facility approved under this chapter shall comply with NRCS nutrient management technical standard 590 (September, 2005), except for sections V.A.2.b(2), V.D, V.E and VI.

Note: NRCS nutrient management technical standard 590 (September, 2005) is reprinted in *Appendix B*. The following sections of the reprinted standard do *not* apply for purposes of this chapter:

V.A.2.b(2), related to additional requirements imposed by local conservation plans.

V.D, related to additional criteria to minimize N and particulate air emissions.

V.E, related to additional criteria to protect the physical, chemical and biological condition of the soil.

VI, related to discretionary considerations.

2. A nutrient management checklist, shown in *Appendix A, worksheet 3, part C*, shall accompany an application for local approval. A qualified nutrient management planner, other than the livestock operator, shall answer each checklist question. The planner shall have reasonable documentation to substantiate each answer, but neither the planner nor the operator is required to submit that documentation with the checklist.

Note: A livestock operator is *not* required to submit a complete nutrient management plan with an application for local approval. Both the operator and the qualified nutrient management planner must sign the nutrient management checklist. *See Appendix A, worksheet 3, part C.*

(b) A political subdivision may ask a nutrient management planner to submit the documentation that the planner relied upon to substantiate the planner's answer to one or more questions on the nutrient management checklist under par. (a) 2. The political subdivision may deny local approval if the planner's documentation does not reasonably substantiate the answer.

(c) Paragraph (a) does not apply to a livestock facility with fewer than 500 animal units unless the operator's ratio of acres to animal units, calculated according to *Appendix A, worksheet 3, part B,* is less than 1.5 for dairy and beef cattle, 1.0 for swine, 2.0 for sheep and goats, 2.5 for chickens and ducks, and 5.5 for turkeys.

Note: A waste and nutrient management worksheet (*Appendix A, worksheet 3*) must accompany every application for local approval. Among other things, the *worksheet* shows the operator's ratio of acres to animal units under par. (c).

Paragraph (c) is an exemption, not a requirement, for livestock facilities. If a livestock facility qualifies for exemption under par. (c), the operator is *not* required to submit a *nutrient management checklist* under par. (a). The ratios stated in par. (c) are based on the phosphorus content of manure from the respective livestock species.

(2) PRESUMPTION. For purposes of local approval, an operator is presumed to comply with sub. (1) if the application for local approval complies with s. ATCP 51.30.

Note: Under s. ATCP 51.30, an application must be complete, credible and internally consistent. The application must include, among other things, a *waste and nutrient management worksheet (Appendix A, worksheet 3).* The completed *worksheet* must include all of the following:

- The types and amounts of manure and other organic waste that the facility will generate when fully populated.
- The types and amounts of waste to be stored, the waste storage facilities and methods to be used, the duration of waste storage, and waste storage capacity.
- The final disposition of waste by landspreading or other means.
- The acreage currently available for landspreading.
- A map showing where waste will be applied to land.
- A *nutrient management checklist* if required under sub. (1).

Local approval is conditioned upon compliance in fact (*see* s. ATCP 51.34 (4)). The presumption in sub. (2) may be rebutted by clear and convincing evidence in the record (*see* ss. ATCP 51.34 and 51.36).

(3) NUTRIENT MANAGEMENT UPDATES. An operator may update nutrient management plans and practices as necessary, consistent with sub. (1) (a) 1.

Note: This subsection does not require an operator to file updates with a political subdivision, but neither does it limit local authority to request updates or monitor compliance with sub. (1) (a) 1. *See* s. ATCP 51.34 (4).

(4) EXEMPTION. This section does not apply if all of the following apply:

(a) The operator holds a WPDES permit for the same proposed livestock facility, and that permit is based on housing for a number of animal units that is equal to or greater than the number for which the operator seeks local approval.

(b) The operator submits a copy of the WPDES permit with the operator's application for local approval.

History: CR 05–014: cr. Register April 2006 No. 604, eff. 5–1–06.

ATCP 51.18 Waste storage facilities. (1) DESIGN, CONSTRUCTION AND MAINTENANCE; GENERAL. All waste storage facilities for a livestock facility shall be designed, constructed and maintained to minimize the risk of structural failure, and to minimize the potential for waste discharge to surface water or groundwater. A waste storage facility may not lack structural integrity or have significant leakage. An unlined earthen waste storage facility may not be located on a site that is susceptible to groundwater contamination.

Note: A "site that is susceptible to groundwater contamination" is defined in s. ATCP 51.01 (39).

(2) EXISTING FACILITIES. For purposes of local approval, an existing waste storage facility is presumed to comply with sub. (1) if a registered professional engineer or certified agricultural engineering practitioner certifies one of the following in the application for local approval:

(a) The facility is constructed of concrete or steel or both, was constructed within the last 10 years according to then–existing NRCS standards, and shows no apparent signs of structural failure or significant leakage.

(b) The facility was constructed within the last 3 years according to then–existing NRCS standards, and shows no apparent signs of structural failure or significant leakage.

(c) The facility was constructed according to NRCS standards that existed at the time of construction, is in good condition and repair, and shows no apparent signs of structural failure or significant leakage.

(d) The facility is in good condition and repair, shows no apparent signs of structural failure or significant leakage, and is located on a site at which the soils and separation distances to groundwater comply with *NRCS technical guide manure storage facility standard 313, table 1 (November, 2004).*

(e) The facility is in good condition and repair, shows no apparent signs of structural failure or significant leakage, is located entirely above ground, and is located on a site at which the soils comply with *NRCS technical guide manure storage facility standard 313, table 5 (November, 2004).*

Note: According to s. ATCP 51.30, an application for local approval must include a certification under sub. (2) for each existing waste storage facility. *See Appendix A, worksheet 4 (waste storage facilities).*

(3) NEW OR SUBSTANTIALLY ALTERED FACILITIES. For purposes of local approval, a new or substantially altered waste storage facility is presumed to comply with sub. (1) if all of the following apply:

(a) The application for local approval includes design specifications for the facility.

(b) A registered professional engineer or certified agricultural engineering practitioner certifies that the design specifications comply with all of the following:

1. NRCS technical guide manure storage facility standard 313 (November, 2004).

2. NRCS technical guide manure transfer standard 634 (November, 2004).

Note: According to s. ATCP 51.30, an application for local approval must include the design specifications and certification to which sub. (3) refers. *See Appendix A, worksheet 4 (waste storage facilities).*

(4) CLOSED FACILITIES. If a waste storage facility is closed as part of the construction or expansion of a livestock facility, the closure shall comply with *NRCS technical guide closure of waste impoundments standard 360 (December, 2002).* A closure is presumed to comply with this subsection, for purposes of local approval, if the application for local approval includes the closure plan and certification required under s. ATCP 51.30.

Note: According to s. ATCP 51.30, an application for local approval must identify any waste storage facilities to be closed. The application must include a closure plan for each identified facility. A registered professional engineer or certified agricultural engineering practitioner must certify that the closure plan complies with *NRCS technical guide closure of waste impoundments standard 360 (December 2002). See Appendix A, worksheet 4 (waste storage facilities).*

Under s. NR 151.05 (3) and (4), an operator must normally close a manure storage facility if the facility has not been used for 24 months, or poses an imminent threat to public health, aquatic life or groundwater.

If a waste storage facility is abandoned or not properly closed, a political subdivision may seek redress under s. 66.0627 or 254.59, Stats., as appropriate.

(5) STORAGE CAPACITY. (a) The waste storage capacity of a livestock facility, not counting any excess storage capacity required for open waste storage facilities under par. (b), shall be adequate for reasonably foreseeable storage needs based on the operator's waste and nutrient management strategy under s. ATCP 51.16.

Note: Section ATCP 51.20 (5) prohibits overflow of waste storage facilities. *See* also ss. NR 151.08 (2) and ATCP 50.04 (1).

(b) An operator shall at all times maintain, in every open waste storage facility, unused storage capacity equal to the greater of the following volumes:

1. One foot multiplied by the top area of the storage facility.

Arm–lwr– 11/04 January 2006

Wisconsin Department of Agriculture, Trade and Consumer Protection
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Phone: (608) 224–4630 or livestocksiting@wisconsin.gov

Worksheet 3 – Waste and Nutrient Management

Part A. Waste Generation and Storage Summary

Instructions: You must complete Parts A and B of this worksheet. If your *livestock facility* will have fewer than 500 *animal units* you may be exempt from Part C, depending on results of Part B. If Part C applies, it must be signed by a *qualified nutrient management planner* (you must also sign).

You are NOT required to complete this worksheet if you already hold a *WPDES permit* for the proposed *livestock facility* (for the same or greater number of *animal units*). Simply check the following box, sign at the bottom of this page, and include a copy of the *WPDES permit* with your application.

☐ I enclose a copy of my *WPDES permit* in place of Worksheet 3.

Specify a single livestock type (dairy, beef, swine, etc.). *Use a separate worksheet for each livestock type.*

Livestock Type: _____

Description of Storage	**Column A** **Waste Storage Capacity** (Gallons or Tons)	**Column B** **Source of Waste** (Animal Waste, Wastewater, Leachate, etc.)	**Column C** **Average Annual Volume of Waste Produced from Each Source** (Gallons or Tons)	**Column D** **Total Average Annual Volume Waste Produced** (Gallons or Tons)	**Column E** **Storage Duration in Days** (Column A divided by Column D times 365 days)
Example: Unit 1 – lagoon	*5,000,000 gallons*	*Animal waste*	*4,000,000 gallons*	*7,000,000 gallons*	*260 days*
		Wastewater	*1,000,000 gallons*		
		Leachate	*2,000,000 gallons*		
Unit 1					
Unit 2					
Unit 3					

Applicant affirms that the information provided in Part A is accurate.

Signature of Applicant or Authorized Representative Date

Worksheet 3 (continued)

Arm–lwr– 11/04 January 2006

Part B – Land Base for Applying Nutrients

1. Enter total *animal units* in proposed *livestock facility* (**from worksheet 1**): _____.

2. What percentage of the waste from the *livestock facility* will be:
   a. Applied to land: _____%. Attach map showing where waste will be applied to land.
   b. Processed and sold as commercial fertilizer, under a fertilizer license: _____%.
   c. Disposed of in other ways: _____%. Describe ways: _____

3. Multiply the percent in line 2a by the number of *animal units* in line 1. Result (# of *animal units*): _____

4. Total acres of cropland currently available for land application (owned, rented, or landspreading agreement): _____

5. Divide # of acres in line 4 by # of *animal units* in line 3 to obtain ratio of acres to *animal units*: _____

6. Is the ratio in line 5 equal to or greater than the applicable ratio in Table 1? _____

   If YES, and if the # of *animal units* in line 1 is less than 500, you need NOT complete Part C. Otherwise, complete Part C.

Table 1: Acreage per *Animal Unit*

Animal Type	Acres per *Animal Unit**
Dairy	1.5
Beef	1.5
Swine	1.0
Chickens/Ducks	2.5
Turkeys	5.5
Sheep/Goats	2.0

* NOTE: A *livestock facility* is NOT required to attain or exceed this ratio of acres to *animal units*. But IF your *livestock facility* will attain or exceed this ratio and will have fewer than 500 *animal units*, you need NOT complete Part C of this worksheet.

Applicant affirms that the information provided in Part B is accurate.

Signature of Applicant or Authorized Representative Date

Worksheet 3 (continued)

arm–lwr– 11/04 January 2006

Part C – Nutrient Management Checklist

Instructions: All applicants must submit this checklist unless exempted under Part A or B. The checklist is based on the *NRCS* Technical Guide Nutrient Management Standard 590 (September, 2005).

County Name:	Date Submitted:	Township (T. N., S.) – (R. E., W.)
Cropland Acres: (owned, rented, or with manure spreading agreement)	Name of livestock operator submitting checklist:	

	Yes	NA
1. Are the following field features identified on maps or aerial photos?		
a) Field location, soil survey map unit(s), field boundary, and field identification number.		
b) Areas prohibited from receiving nutrient applications: Surface water, established concentrated flow channels with perennial cover, permanent non–harvested vegetative buffer, non–farmed wetlands, sinkholes, lands where established vegetation is not removed, nonmetallic mines, and fields eroding at a rate exceeding tolerable soil loss (T).		
c) Areas within 50 ft of a potable drinking water well where mechanically–applied manure is prohibited.		
d) Areas prohibited from receiving winter nutrient applications: Slopes > 9% (12% if contour–cropped); Surface Water Quality Management Area (SWQMA) defined as land within 1,000 ft of lakes and ponds or within 300 ft of perennial streams draining to these waters, unless manure is deposited through winter gleaning/pasturing of plant residue and not exceeding the N and P requirements of this standard.		
e) Areas where winter applications are restricted unless effectively incorporated within 72 hours: Land contributing runoff within 200 ft upslope of direct conduits to groundwater such as a well, sinkhole, fractured bedrock at the surface, tile inlet, or nonmetallic mine.		
f) Sites vulnerable to N leaching: Areas within 1,000 ft of a municipal well, and soils listed in Appendix 1 of the Conservation Planning Technical Note WI–1.		
2. Are erosion controls implemented so the crop rotation will not exceed T on fields that receive nutrients according to the conservation plan or WI P Index model?		
3. Check the methods below used to determine field soil nutrient levels:		
a) Soil samples were collected and analyzed within the last 4 years according to UW Publication A2100 recommendations.		
b) For fields not meeting (a.) above, soil test phosphorus levels are assumed to be greater than 100 ppm soil test P. *		
c) For fields not meeting (a.) above, preliminary estimates of soil nutrients were determined using limited soil sampling (> 5 acre per sample) but analyzed by a DATCP certified laboratory. *		
*For fields with soil nutrient levels determined under (b) or (c), the applicant must collect and analyze soil samples meeting the requirements of A2100 within 12 months of siting approval, and revise the nutrient management plan accordingly.		
4. Using the field's predominant soil series and realistic yield goals, are planned nutrient application rates, timing, and methods of all forms of N, P, and K listed in the plan and consistent with UW Publication A2809, *Soil Test Recommendations for Field, Vegetable and Fruit Crops,* and the 590 standard?		
5. Do manure production and collection estimates correspond to the acreage needed in the plan? Are manure application rates realistic for the calibrated equipment used?		
6. Is a single phosphorus (P) assessment of either the P Index or soil test P management strategy uniformly applied to all fields within a tract?		
7. Are areas of concentrated flow, resulting in reoccurring gullies, planned to be protected with perennial vegetative cover?		
8. Will nutrient applications on non–frozen soil within the SWQMA comply with the following?		
a) Unincorporated liquid manure on unsaturated soils will be applied according to Table 1 of the 590 standard to minimize runoff.		
b) One or more of the following practices will be used: 1) Install/maintain permanent vegetative buffers, or 2) Maintain greater than 30% crop residue or vegetative coverage on the surface after nutrient application, or 3) Incorporate nutrients leaving adequate residue to meet tolerable soil loss, or 4) Establish fall cover crops promptly following application.		
9. Is a narrative included which describes proposed manure collection, transportation, and application methods?		

I certify that the documentation supporting this checklist is complete and accurate:

Signature of *Qualified Nutrient Management Planner*, other than applicant: _____

(qualified by 1. NAICC–CPCC, 2. ASA–CCA, 3. ASA–Professional Agronomist, 4. SSSA–Soil Scientist)

Signature of Applicant or Authorized Representative: _____

Discussion Guide - Nutrient Management
Livestock Facility Siting Technical Expert Committee

Scope of Discussion

The committee's first discussion covers items related to nutrient management. Under ATCP 51, land applications of waste from a livestock facility must comply with NRCS nutrient management technical standard 590 (Sept. 2005) except for sections V.A.2.b(2), V.D, V.E and VI.

During the meeting, DATCP staff will present on the nutrient management standard in ATCP 51 and related recommendations made by past committees. DATCP staff will also present on the technical elements of changes between the 2005 and 2015 standard. The committee will address the items, below, and determine if recommendations need to be made for changes to the department's rule.

Notes will be prepared by DATCP staff reflecting the committee's discussions and recommendations.

Background

ATCP 51.16 establishes the standard for land spreading of waste generated from permitted livestock facilities through a local siting ordinance.

- The 2005 NRCS 590 Nutrient Management Standard is used
- Submission of a full nutrient management plan is not required, as completion of the checklist within the application establishes the presumption of compliance with the 590 standard

In 2010, the technical expert committee reviewed items with the 51.16 standard and offered the following:

- Similar to the requirements for obtaining a WPDES permit from the DNR as a CAFO, requiring submission of a full nutrient management plan is something that local permitting authorities already do in order to evaluate compliance with the standard.
- There is growing concern that the (2005) 590 standard is not adequate to protect surface and groundwater from contamination. A revised 590 standard could be referenced by the rule.

In 2014-2015, the technical expert committee reviewed issues with the 51.16 standard and offered the following

- ATCP 51.16(4) should not exempt CAFOs from requirements to submit documentation to substantiate a nutrient management plan complies with NRCS nutrient management standard 590 (September 2005) (NRCS 590) and to submit annual plan updates if requested by a local government
- Worksheet 3 of the application should require an applicant to identify rented and owned spreadable acres
- 51.16 should incorporate the revised 2015 NRSC 590 standard to replace the 2005 version
- DATCP should clarify how local permitting authorities can meet state requirements for adopting more stringent local standards in order to better protect surface and groundwater

In 2018-19, the technical expert committee reviewed issues with the 51.16 standard and offered the following

- Reiterated the 2014 recommendation to incorporate the 2015 version of the 590 standard

Items for consideration

The 2005 version of the 590 standard is outdated when compared to other state rules with nutrient management requirements, which use the 2015 version such as Wis. Admin Code ATCP 50.04(3)(e). The application of different requirements between programs can be burdensome for local governments, and it may present a conflict with s. 93.90(2)(a), Wis. Stats.

According to ATCP 51.16(4) facilities with a WPDES CAFO permit for an equal or greater number of animal units can substitute their approved permit for worksheet 3 to substantiate compliance with the 590 standard. This means that unless local permitting authorities cite to another authority to do so, they cannot review the nutrient management plan themselves and must presume compliance with the standard.

ATCP 51.16(1)(a)2 disqualifies facility operators from being able to prepare their own nutrient management plans or checklists for their applications. This is contrary to ATCP 50.48(2)(a)4, which describes that an operator may be qualified to prepare their own nutrient management plan if they complete a DATCP approved training course, have their first plan approved by an instructor, and complete a training course at least every 4 years.

The checklist on worksheet 3 of the application presumes compliance with the 590 standard if completed, and nutrient management plans are not outright required to be submitted for approval unless specially requested by the permitting authority.

Proof of adequate acreage for waste spreading, particularly on rented lands, is not included in the application worksheet. There have been instances reported where land listed as rented spreadable acreage may not have had an agreement to do so.

Questions for the Technical Expert Committee:

1. What about the current 51.16 standard for nutrient management is working, and what is not?

2. Does the 2005 590 standard meet the obligation of s. 93.90(2)(b)1-7?

3. Should 51.16 be revised to require compliance with the 2015 NRCS 590 standard?
    a. Or, should ATCP 51 reference ATCP 50 to match other state program requirements?

4. Should the worksheet 3 exemption for WPDES permit holders under 51.16(4) remain?
    a. If yes: Should additional documentation from WPDES permit applicants be required as part of the exemption?
        i. What information and documentation would be helpful for local governments to request of WPDES holders to substantiate compliance? For example: items included in the NRCS 590 NM plan and Checklist, nutrient application restriction maps, and/or NM database, specific WPDES Permit components?

5. Should facility operators continue to be disqualified from being able to prepare their own nutrient management checklists and plans for approval of their permit?

6. Should the 590 checklist in worksheet 3 remain the only required submission to prove compliance with the standard, or should additional materials be required to be submitted, such as the full plan?

7. When determining permit approval related to land base access for spreading, would it help local governments if applications identified the acres owned versus rented? If so, what is the best way to accomplish this?

2015 updates: Wisconsin Nutrient Management 590 Standard

July 28, 2016

- This bullet highlights changes to the 2005 version of the NRCS 590 Nutrient Management Standard. ***Not all of the changes, additions, or deletions made to the 590 Standard are noted in this summary sheet.***

■ This bullet notes items that have not changed.

REQUIREMENTS FOR SURFACE AND GROUNDWATER PROTECTION

Guidelines for all fields where manure, organic by-products, or fertilizer nutrients are applied:

■ The source, rate, timing and method of application for all major nutrients — nitrogen (N), phosphorus (P_2O_5), and potassium (K_2O)— should be accounted for and should be consistent with UWEX A2809 recommendations. Applications must not run off the intended application site; erosion must not be greater than tolerable soil loss (T) over the crop rotation; use perennial vegetation to protect areas of concentrated flow resulting in recurring gullies.

- Control ephemeral erosion using reduced tillage, adjust the crop rotation, or implement other practices such as contouring to control this erosion.
- Show adequate acreage and a winter spreading plan for all farms with mechanically applied manure or organic by-products.
- Where excessive rain has caused crop N deficiency, apply up 46 lb per acre **rescue N** and document the need for this additional N using one of the methods listed in Tech Note WI-1. Appendix 3. If more than 46 lb N per acre is applied, the documentation must include two of the listed methods.
- Estimate available manure nutrients with **book values** or **manure samples.** If sampling, establish a baseline by averaging samples collected for at least 3 consecutive years. Later samples can be 1 every 4 years unless the farm's operation changes.
- Account for N and P_2O_5 deposited by pastured or gleaning animals. Pasturing is allowed within 50 feet of a well or direct conduit to groundwater, in SWQMA in the winter, and on all slopes in the winter.

■ If manure or organic by-products are applied during a crop rotation (8 years or less), use a P management strategy: **Phosphorus Index of 6 or less** or **Soil test P thresholds:**

  ■ **Greater than 50 ppm soil test P:** Balance the total P applications with P removed by crops.

    - **Greater than 100 ppm soil test P:** Total P applications from **all** sources shall not exceed guidelines from UWEX A2809. If manure P applications above these guidelines are necessary due to lack of suitable application sites, P applications shall be 25% less than the cumulative annual crop removal over a maximum rotation length of 8 years.

Applications are prohibited on:

- Concentrated flow channels; surface water; **saturated soils**; areas of active **snow melt** where water is flowing; land where vegetation is not removed — unless needed for establishment and maintenance of a **conservation practice**.
- Direct conduits to groundwater, a potable well, or within 8 feet of irrigation wells.
- Areas within 50 feet of direct conduits to groundwater, unless directly deposited by gleaning or pasturing animals or **as starter fertilizer to corn.**
- Areas near **public water supplies** within 1000 feet of a community potable water well; or areas within 100 feet of a non-community potable water well (church, school, and restaurant) unless **manure is treated** to substantially eliminate pathogens.
- Areas locally delineated by the Land Conservation Committee or in a conservation plan **as areas contributing runoff to direct conduits to groundwater** unless manure is substantially buried within 24 hours of application.

Nutrients applied within Surface Water Quality Management Area (SWQMA) 1,000 feet of lakes/ponds or 300 feet of rivers use one or more of the following:

■ 1. Install/maintain vegetative buffers or filter strips; 2. Maintain > 30% cover after nutrient application; 3. Incorporate within 72 hours of application; 4. Establish crops prior to, at, or promptly following application.

- 5. Have a minimum of 3 consecutive years no-till when making applications to fields with **< 30% residue**, such as silage fields, and apply nutrients within 7 days of planting.
- Mechanical applications of **unincorporated liquid manure 11% or less dry matter** within the SWQMA, or **where subsurface drainage is present** — limit applications to 12,000 gal/acre and visually monitor accessible tile outlets before, during, and after applications for discharge of liquid manure or organic by-product.

  ■ If a discharge is observed, stop applications. Sequential applications may be made to meet the nutrient need. Wait a minimum of 7 days between sequential applications.

A winter spreading plan is required for all farms mechanically applying manure or organic by-products:

- Identify quantities of **manure spread during winter**, or **generated in 14 days**, whichever is greater; **storage/stacking capacity** for each manure type applied on the farm — manure that is ≥ 16% solids without permanent storage, complete an evaluation to determine if stacking sites consistent with NRCS 313 standard are available.

2015 updates: Wisconsin Nutrient Management 590 Standard

July 28, 2016

When frozen or snow-covered soils prevent effective incorporation:

- Do not apply nutrients within the SWQMA or apply N and P fertilizer, except on grass pastures and winter grains.
- Do not exceed the P removal of the following growing season's crop when applying manure. Liquid manure applications are limited to 7,000 gal/acre. All winter manure applications are not to exceed **60** lb of P_2O_5/acre.
- Do not surface apply **liquid manure during February and March** on areas depicted on the 590 spreading restriction maps where DNR Well Compensation funds provided replacement water supplies for wells contaminated with livestock manure or where Silurian dolomite is within **60 inches** of the soils surface.
- Do not apply manure within **300 feet** of direct conduits to groundwater. (in version 2005, 200 feet).
- Do not apply nutrients to fields with **slopes** greater than 6% (C,D,E,F) unless the plan documents that no other accessible fields are available for winter spreading and two of the following are implemented:
  1. Contour buffer strips or contour strip cropping.
  2. Leave all crop residue and no fall tillage.
  3. Apply manure in intermittent strips on no more than 50% of field.
  4. Apply manure on no more than 25% of the field during each application, waiting a minimum of 14 days between applications.
  5. Reduce manure application rate to 3,500 gal/acre or 30 lb P_2O_5/acre, whichever is less.
- Do not apply nutrients to fields where **concentrated flow channels** are present unless two of the following are implemented:
  - Options 1-5 above.
  6. No manure application within 200 feet of all concentrated flow channels.
  7. Fall tillage is on the contour and slopes are lower than 6%.

ADDITIONAL REQUIREMENTS FOR GROUNDWATER PROTECTION

On N restricted soils that include high permeability soils (P), or rock soils with less than 20 inches to bedrock (R), or wet soils with less than 12 inches to apparent water table (W):

- **In late summer or fall:** No commercial N applications should be applied on areas identified as having **soil depth of 5 feet or less over bedrock**, P, R, W soils, areas within **1,000 feet of a community potable water well**, except where needed for establishment of fall seeded crops or blended commercial **fertilizer materials are needed** to meet UWEX Pub. A2809 guidelines. For these exceptions, the N application rate shall not exceed **36 lb N** per acre, and all nutrients must be credited towards the crop requirement.
- **In spring or early summer:** When commercial N is applied on R, W, and combination soils, do not exceed the crop N A2809 rates from all sources. On P soils, for full season crops, do not exceed the crop N rate guidelines and apply one of the following management strategies:
  - A split or delay N application to apply a majority of crop N requirement after crop establishment.
  - Use a nitrification inhibitor with ammonium forms of N.
  - Use slow and controlled release fertilizers for a majority of the crop N requirement applied near the time of planting.
- **In late summer or fall:** When **manure and/or organic by-products** are applied, use rates of available N that do not smother the crop; do not exceed UWEX Pub. A2809; do not exceed Part III. B.4. Table 2 of the Technical Note WI-1; or do not exceed the rate listed below, whichever is less:

Use ≤ 120 lb available N/acre on:

P and R soils

- Applications > 4.0% dry matter (DM) on all crops, except single annual crops.
- Applications ≤ 4.0% DM on all crops, except single annual crops wait until after soil temp. < 50°F or Oct. 1, use either a nitrification inhibitor, or surface apply and do not incorporate for at least 3 days.

W soils or combination W soils

- Applications > 4.0% DM on all crops.
- Applications ≤ 4.0% DM on all crops use at least one of the following practices:
  - Use a nitrification inhibitor.
  - Apply on an established cover crop, an overwintering annual, or perennial crop.
  - Establish a cover crop within 14 days of application.
  - Surface apply & do not incorporate for at least 3 days.
  - Delay application until October 1 or soil temperatures are less than 50°F.

Use ≤ 90 lb available N/acre on:

P and R soils (wait until after soil temp. < 50°F or Oct. 1)

- Applications > 4.0% DM on single annual crops; or
- Applications ≤ 4.0% DM on all crops use either a nitrification inhibitor, or surface apply and do not incorporate for at least 3 days.

W soils or combination W soils

- Applications ≤ 4.0% DM on all crops.

Wisconsin Department of Agriculture, Trade and Consumer Protection
Division of Agricultural Resource Management
Bureau of Land and Water Resources
PO Box 8911, Madison WI 53708-8911, Phone: 608-224-4605

Use this form to check nutrient management (NM) plans for compliance with the WI NRCS 2015-590 Standard.

Nutrient Management Checklist

Wis. Stat. §92.05(3) (k), Wis. Admin. Code §ATCP50.04(3) and Ch. 51

COUNTY	DATE PLAN SUBMITTED	GROWING SEASON YEAR PLAN IS WRITTEN FOR (from harvest to harvest)
TOWNSHIP: (T. N.) RANGE: (R. E., W).		CHECK ONE: ☐ Initial Plan or ☐ Updated Plan

NAME OF FARM OPERATOR RECEIVING NM PLAN First Name LastName	FARM NAME (OPTIONAL)		BUSINESS PHONE ( ) -
STREET ADDRESS	CITY	STATE	ZIP
REASON THE PLAN WAS DEVELOPED: Click and choose. (Ordinance, NR 243 WPDES or NOD, DATCP-FP or cost share (cs), DNR-cs, USDA-cs, Other)			CROPLAND ACRES (OWNED & RENTED)
RENTED FARM(S) LANDOWNER NAME(S) AND ACREAGE: add sheet(s) if needed			

WAS THE PLAN WRITTEN IN SNAPPLUS? ☐ YES ☐ NO If yes, which software version, if known?

CHECK PLANNER'S QUALIFICATION: Click and choose.
(1. NAICC-CPCC, 2. ASA-CCA, 3. SSSA-Soil Scientist, 4. DATCP approved training course, 5. Other approved by DATCP)

NAME OF QUALIFIED NUTRIENT MANAGEMENT PLANNER First Name Last Name			BUSINESS PHONE ( ) -
STREET ADDRESS	CITY	STATE	ZIP

Use header sections to add comments. Mark NA in the shaded sections if no manure is applied.

1. Does the plan include the following nutrient application requirements to protect surface and groundwater?

This section applies to fields and pastures. If no manure is applied, check NA for 1.c., 1.h., 1.i., 1.n., 1.o., 1.q., 1.s.	Yes	No	NA
a. Determine field nutrient levels from soil samples analyzed by a DATCP **certified laboratory**.	☐	☐	☐
b. For fields or pastures with mechanical nutrient applications, determine field nutrient levels from **soil samples** collected within the last **4 years** according to 590 Standard (590) and UWEX Pub. A2809, *Nutrient Application Guidelines for Field, Vegetable, and Fruit Crops in Wisconsin* (A2809) typically collecting **1 sample per 5 acres** of 10 cores. Soil tests are not required on **pastures** that do not receive mechanical applications of nutrients if either of the following applies: 1. The pasture average stocking rate is one animal unit per acre or less at all times during the grazing season. 2. The pasture is winter grazed or stocked at an average stocking rate of more than one animal unit per acre during the grazing season, and a nutrient management plan for the pasture complies with 590 using an assumed soil test phosphorus level of 150 PPM and organic matter content of 6%.	☐	☐	☐
c. For **livestock siting permit approval**, collect and analyze soil samples meeting the requirements above in 1. b., excluding pastures, within 12 months of approval and revise the nutrient management plan accordingly. Until then, either option below maybe used: 1. Assume soil test phosphorus levels are greater than 100 ppm soil test P, OR 2. Use preliminary estimates analyzed by a certified DATCP laboratory with soil samples representing > 5 ac/sample.	☐	☐	☐
d. **Identify all fields'** name, boundary, acres, and location.	☐	☐	☐
e. Use the field's previous year's legume credit and/or applications, predominant soil series, and realistic yield goals to determine the crop's nutrient **application rates consistent with A2809 for ALL forms of N, P, and K**.	☐	☐	☐
f. Make no **winter applications of N and P** fertilizer, except on grass pastures and winter grains.	☐	☐	☐
g. Document method used to determine **application rates**. Nutrients shall not runoff during or immediately after application.	☐	☐	☐
h. Identify in the plan that **adequate acreage** is available for manure produced and/or applied.	☐	☐	☐
i. Apply a single phosphorus (P) assessment using either the **P Index** or **soil test P** management strategy to all fields within a tract when fields receive manure or organic by-products during the crop rotation.	☐	☐	☐
j. Use **complete crop rotations** and the field's **critical soil** series to determine that sheet and rill erosion estimates will not exceed **tolerable soil loss** (T) rates on fields that receive nutrients.	☐	☐	☐
k. Use contours; reduce tillage; adjust the crop rotation; or implement other practices to **prevent ephemeral erosion**; and maintain perennial vegetative cover to **prevent reoccurring gullies** in areas of concentrated flow.	☐	☐	☐
l. Make no nutrient applications within 8' of **irrigation** wells or where **vegetation is not removed**.	☐	☐	☐
m. Make no nutrient applications within **50' of all direct conduits to groundwater**, unless directly deposited by gleaning/pasturing animals or applied as starter fertilizer to corn.	☐	☐	☐

	Yes	No	NA
n. Make no **untreated manure applications** to areas within 1000' of a **community potable water well** or within 100' of a **non-community potable water well** (ex. church, school, restaurant) unless manure is treated to substantially eliminate pathogens.	☐	☐	☐
o. Make no manure applications to areas **locally delineated** by the Land Conservation Committee or in a conservation plan as areas contributing runoff to direct conduits to groundwater unless manure is substantially buried within 24 hours of application.	☐	☐	☐
p. Make no applications of **late summer or fall commercial N fertilizer** to the following areas UNLESS needed for establishment of fall seeded crops OR to meet A2809 with a blended commercial fertilizer. Commercial fertilizer N applications shall not exceed 36 lbs. N/acre on: • Sites vulnerable to N leaching **PRW Soils** (P=high permeability, R= bedrock < 20 inches, or W= wet < 12 inches to apparent water table); • Soils with depths of 5 feet or less to bedrock; • Area within 1,000 feet of a community potable water well. On **P soils, when commercial N is applied** for full season crops in **spring and summer**, follow A2809 and apply one of the following: 1. A split or delayed N application to apply a majority of crop N requirement after crop establishment. 2. Use a nitrification inhibitor with ammonium forms of N. 3. Use slow and controlled release fertilizers for a majority of the crop N requirement applied near the time of planting.	☐	☐	☐
q. Limit manure applications in late summer or fall using the lesser of A2809 or the following 590 rates on **PRW Soils.** Use ≤ 120 lbs. available N/acre on: **P and R soils** on *all crops, except annual crops*. Additionally, manure with ≤ 4% dry matter (DM) wait until after soil temp. < 50°F or Oct. 1, and use either a nitrification inhibitor OR surface apply and do not incorporate for at least 3 days. **W soils or combo. W soils** on *all crops.* Additionally, manure with ≤ 4% DM on *all crops* use at least one of the following: **1**. Use a nitrification inhibitor; **2**. Apply on an established cover crop, an overwintering annual, or perennial crop; **3**. Establish a cover crop within 14 days of application; **4**. Surface apply & don't incorporate for at least 3 days; **5**. Wait until after soil temp. < 50°F or Oct. 1. Use ≤ 90 lbs. available N/acre on: **P and R soils** on *annual crops* wait until after soil temp. < 50°F or Oct. 1. Additionally, manure with ≤ 4% DM use either a nitrification inhibitor OR surface apply and do not incorporate for at least 3 days. **W soils or combination W soils** receiving manure with ≤ 4% DM on *all crops*.	☐	☐	☐
r. Use at least one of the following practices on **non-frozen soils for all nutrient applications** within Surface Water Quality Management Area **(SWQMA)** = 1000' of lakes/ponds or 300' of rivers: **1**. Maintain > 30% cover after nutrient application; **2**. Effective incorporation within 72 hours of application; **3**. Establish crops prior to, at, or promptly following application; **4**. Install/maintain vegetative buffers or filter strips; **5**. Have at least 3 consecutive years no-till for applications to fields with < 30% residue (silage) and apply nutrients within 7 days of planting.	☐	☐	☐
s. Limit mechanical applications to **12,000 gals/acre of unincorporated liquid manure or organic by-products** with 11% or less dry matter where **subsurface drainage** is present OR within **SWQMA**. Wait a minimum of 7 days between sequential applications AND use one or more of the practice options on non-frozen soils listed in 1.r.1. through 1.r.5.	☐	☐	☐

2. When frozen or snow-covered soils prevent effective incorporation, does the plan follow these requirements for winter applications of all mechanically applied manure or organic by-products? *This section doesn't apply to winter gleaning/pasturing meeting 590 N and P requirements.*

If no manure is applied, check NA for 2.a. through 2.g..	Yes	No	NA
a. Identify **manure quantities planned to be spread during the winter**, or the amount of manure generated in 14 days, whichever is greater. *For daily haul systems, assume 1/3 of the manure produced annually will need to be winter applied.*	☐	☐	☐
b. Identify **manure storage capacity** for each type applied and stacking capacity for manure ≥ 16% DM if permanent storage does not exist.	☐	☐	☐
c. Show on map and make no applications within the **SWQMA**.	☐	☐	☐
d. Show on map and make no surface applications of liquid manure during **February and March** where **Silurian dolomite** is within 60 inches of the soils surface OR where **DNR Well Compensation** funds provided replacement water supplies for wells contaminated with livestock manure.	☐	☐	☐
e. Show on map and make no applications of manure within **300 feet** of **direct conduits to groundwater**.	☐	☐	☐
f. Do not exceed the P removal of the following growing season's crop when applying manure. Liquid manure applications are limited to **7,000 g/acre**. All winter manure applications are not to exceed **60 lbs. of P2O5/acre**.	☐	☐	☐
g. Make no applications of manure to fields with **concentrated flow channels** unless using two of the following: **1.** Contour buffer strips or contour strip cropping; **2.** Leave all crop residue and no fall tillage; **3.** Apply manure in intermittent strips on no more than 50% of field; **4.** Apply manure on no more than 25% of the field waiting a minimum of 14 days between applications; **5.** Reduce manure app. rate to 3,500 gal. or 30 lbs. P2O5, whichever is less; **6.** No manure application within 200 feet of all concentrated flow channels; **7.** Fall tillage is on the contour and slopes are lower than 6%. Make no applications to **slopes greater than 6%** (soil map units with C, D, E, and F slopes) unless the plan documents that no other accessible fields are available for winter spreading AND two of the options 2.g.1. through 2.g.5. are used.	☐	☐	☐

I certify that the plan represented by the answers on this checklist complies with Wisconsin's NRCS 2015-590 NM Standard or is otherwise noted.

Qualified NM planner signature NAICC-*Certified Professional Crop Consultant*, ASA-*Certified Crop Adviser*, or SSSA-*Soil Scientist* Date

Qualified NM farmer-planner or Authorized farm operator signature receiving and understanding the plan Date

Signature if reviewed for quality assurance Date