

A G E N D A

Livestock Siting Technical Expert Committee

Tuesday, January 27, 2015

9:00 a.m. to 3:00 p.m.

DATCP
Board Room 106
2811 Agriculture Drive
Madison WI 53718

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| 9:00 a.m. | Call to Order |
| 9:05 | Review of December 19th meeting notes – Jeff Lyon |
| 9:15 | Discussion of Fourth Committee Assignment (available at this website,
http://datcp.wi.gov/uploads/Environment/pdf/LivestockTechComMeetingMaterialsDec2014.pdf) <ul style="list-style-type: none">• Questions Nos. 2-5 |
| 10:30 | Break – Coffee provided |
| 10:45 | Continue Discussion of Fourth Committee Assignment – Members |
| 12:00 p.m. | Lunch – Provided |
| 12:45 | Continue Discussion of Fourth Committee Assignment – Members |
| 1:50 | Break |
| 2:00 | Overview regarding Setbacks – Steve Struss and Richard Castelnovo <ul style="list-style-type: none">• Question No. 1• Completion of table |
| 2:45 | Wrap Up and Future Meetings – Jeff Lyon <ul style="list-style-type: none">• Summary of progress on assignment and decision on need for additional discussion• Discussion of future meetings-February 19th and March |
| 3:00 | Adjourn |

MEETING NOTES

Livestock Siting Technical Expert Committee

September 18, October 15, November 18, and December 19, 2014

Fourth Meeting Attendees

Members: Chuck McGinley, Mark Borchardt, Tonya Gratz, Jerry Halverson, Brian Holmes, Bob Pofahl, and Mark Ruark. Advisors: Joe Baeten, Richard Castelnovo, David Panofsky, Pat Murphy, Steve Struss, Robert Thibodeaux, and Gretchen Wheat. Additional attendees: Lisa Trumble, Sara Walling.

Notes for the committee are intended to capture the committee's consensus regarding responses to assignment questions, and will be maintained on a cumulative basis. The notes covering the most recent activity of the committee are highlighted in gray. Notes will be presented to the committee for further review at future meetings. The following are the cumulative notes for the first two meetings.

Consistency of Rules (CR)

CR Question # 1

To be consistent with the state standards in NR 151 and ATCP 50, ATCP 51 should include a requirement for livestock operators to manage their operations to avoid significant discharges of process wastewater. The "zero discharge" standard in NR 243 should not be incorporated into ATCP 51. In applying this new standard, ATCP 51 should use the definition of process wastewater and significant discharge in NR 151. Complying with this standard will depend on a number of factors including a farm's location to waters of the state. The siting application should be modified to better document current and future compliance with this requirement.

CR Question # 2 (as modified at second meeting)

ATCP 51 should require that new and substantially altered bunkers, paved or other lined feed storage facilities be designed, constructed and operated in accordance with NRCS standard 629 (January, 2014) and NRCS standard 635 (September, 2012) except that facilities proposed in low risk locations may not need to install collection systems or vegetative treatment areas if certain conditions are met. This exception is only available to proposed livestock facilities under 1,000 AU. As a first step, a permit applicant must have an evaluation of their site and existing facilities conducted using the procedures discussed in the response to Engineering Question #5.

Applying the evaluation criteria in NR 151.055(3), it must be determined that any existing facility subject to alteration ("expanded facility") is not causing a substantial discharge. The evaluation also must document that the proposed new or expanded facility has adequate separation distances to protect against surface water and groundwater contamination. In addition, the evaluation must show that the soils near the new or expanded facility do not have a

high potential for leaching contaminants to groundwater. The committee discussed further limiting the exception to exclude new or expanded facilities that exceed 0.5-1.0 acres in size.

If these required conditions are met, applicants can receive approval of the proposed facility if they (1) design and construct the new facility, or new portion of the expanded facility, in accordance with Tables 1, 2, or 3 in the current NRCS standard 629, and (2) divert clean water away from the new or expanded facility.

These design and construction requirements apply to new or substantially altered storage areas that hold commonly stored feeds, not just feed over 70 percent moisture (cannery, brewers and distillers byproduct feeds). The committee considered applying these requirements to facilities that store feed with as low as 40 percent moisture, but also considered using a percentage somewhere between 40 and 70 percent. The design and construction requirements do not apply to feed stored in bags or tower silos.

CR Question # 3

For all volumes generated, milking center wastewater should be discharged to manure storage or another structure that meets the design criteria of NRCS standard 313 except if the livestock facility produces less than 500 gallons of wastewater daily and does not store the wastewater for an extended period, then the livestock operation must use the treatment practices described in NRCS standard 629 (January 2014).

CR Question # 4

To be consistent with the state standards in NR 151 and ATCP 50, ATCP 51 should require that cropland covered by a permitted facility's nutrient management plan have an average Phosphorus Index (PI) of 6 over a rotation and annual PI not to exceed 12, consistent with the requirements of NR 151.04. A facility's required nutrient management plan, if it includes an appropriate phosphorus index (PI) calculation value, may be used to demonstrate compliance with these PI requirements. A livestock operator may meet the phosphorus management requirements in NRCS standard 590 (September, 2005) by using a soil test management approach as an alternative to a PI calculation. A local government may request NM plan updates and other documentation to monitor a permitted facility's compliance with the PI requirement.

CR Question # 5

ATCP 51 should incorporate the following standards adopted in NR 151 and ATCP 50:

- a. A requirement that pastures be managed to control erosion and be covered by a nutrient management plan if they have certain stocking rates.
- b. A requirement that tillage not be conducted within a 5-20 foot setback between cropped fields and surface water.

As a condition of their permits, livestock facilities would be responsible for maintaining compliance with these requirements on all land, including rented acres.

CR Question # 6

DNR does not currently enforce the tillage setback through its CAFO permits, but it may revise its rule requirements to incorporate this and other NR 151 requirements. While DNR does not

currently enforce the annual maximum PI of 12, it has other CAFO requirements that function in a similar manner and may include this particular requirement in a future rule update. DNR may also require CAFOs to prepare a pasture management plan. After considering how NR 151 standards are applied to CAFOs, the committee did not recommend any adjustments to its recommendations for questions 1 through 5 above.

CR Question # 7

To be consistent with ATCP 50, references in ATCP 51 should be updated to reflect the following NRCS technical standards:

- a. NRCS technical guide waste storage facility standard 313 (January, 2014).
- b. NRCS technical guide, closure of waste impoundments standard 360 (March, 2013).
- c. NRCS technical guide waste treatment standard 629 (January, 2014)
- d. NRCS technical guide waste transfer standard 634 (January, 2014).
- e. NRCS technical guide vegetated treatment area standard 635 (September, 2012).

The committee recognized that references to the NRCS standards listed, and possibly additional NRCS standards, will need to be updated in ATCP 51.

Engineering

E Question # 1 (as modified at the third meeting)

For the purposes of the siting rule, BARNY is a more appropriate tool than BERT for evaluating animal lot runoff and design practices to meet targets for annual phosphorus runoff. BERT does not account for local rainfall conditions, does not generate a result expressed in terms of annual phosphorous runoff, and does not provide design practices to reduce runoff. Despite its limitations, BARNY has a long history and wide acceptance as a tool to assess barnyard runoff. NRCS currently maintains BARNY as a worksheet in [Spreadsheet on Vegetated Treatment Areas](#). NRCS will be updating BARNY to include the most recent NOAA rainfall data. ~~Before making a final recommendation, the committee will evaluate the Annual Phosphorus Loss Estimator (APLE) for barnyards, developed by UW-Madison research soil scientist Peter Vadas, to determine whether it is a better tool than BARNY.~~ Based on a comparison between BARNY and the Annual Phosphorus Loss Estimator (APLE) for barnyards, developed by UW-Madison research soil scientist Peter Vadas, BARNY remains a more appropriate evaluation and design tool, although APLE may have a better supported model for predicting runoff and future enhancements, it may be a better choice over BARNY in the future.

Whichever model is used, a local government should be allowed to require a livestock applicant to submit documentation (e.g. a printout of the model inputs and outputs) to demonstrate compliance with the runoff limits for barnyards. Most agreed that this documentation is easily provided, is often voluntarily submitted, and should be available to local governments if it is not voluntarily provided.

E Question # 2

ATCP 51 should better define when an operator can modify an existing animal lot to meet the [ATCP 51.20\(2\)](#) runoff threshold without implementing the full set of requirements in NRCS 635 related to wastewater treatment. In defining what is allowed as a “minor alteration,” ATCP 51

should retain the requirement that an operator must comply with the NRCS 635 standard if the animal lot is “substantially altered,” which means “an increase of more than 20% in the area or capacity of a livestock structure used to house, feed or confine livestock.”

ATCP 51 should identify the management or practice changes that can be implemented as “minor alterations” to achieve compliance with the runoff thresholds. The following should be considered: lot cleaning, changes to provide laminar flow (e.g., shaping, seeding), roof gutters, diversions, underground outlets, and sediment basins. To document compliance with ATCP 51, an applicant must submit a copy of the BARNY model completed to reflect the proposed changes. To the extent that the changes involve an engineered practice, the applicant must submit a design for the practice that meets the applicable NRCS or other technical standard.

These submissions represent the applicant’s commitment to perform the work promised, and may be enforced in the same manner as other permit requirements. ATCP 51 should be modified to enable a local government to set a one year limit regarding the installation of these “minor alterations,” with the authority to reduce the time if the local government determines that the unmanaged runoff presents an unacceptable risk of contamination to surface or groundwater.

E Question # 3

The evaluation standards and procedures for existing storage structures, as reflected in [Worksheet 4 \(Appendix A, 390-33\)](#) and [Existing Manure Storage Evaluation Flowchart](#), are reasonable and consistent with sound technical principles. Minor adjustments in the evaluation standards might be appropriate, such as extending the allowable window from 3 to 10 years for properly designed storage facilities that are not steel or concrete. Additional guidance should be provided to engineering professionals who conduct evaluations of storage facilities. For example, it is usually necessary to empty a facility, particularly earthen-lined structures, to conduct a valid inspection, however this may be difficult. A number of factors may determine whether there is reasonable cause to fully empty a facility, including its age, the results of visual inspection of its exposed area, and the likelihood that agitation may have compromised its liner. If no documentation is available regarding a facility’s separation distances to groundwater or bedrock, test pits or borings may be required to complete a facility evaluation. This approach is consistent the procedures used by DNR in its evaluation of storage facilities under NR 243.

By definition, a manure storage facility includes the waste transfer portion of the facility. It is feasible to evaluate exposed portions of an existing waste transfer system. If the waste transfer system was installed according to technical standards, a professional engineer could review the design and “as-built” documentation. Reception tanks may be visually inspected, or assessed for leakage using soil borings. Likewise open channels and equipment such as pumps and valves can be visually inspected. The evaluation of conveyances, such as underground pipes, is more challenging; it may not be realistic to require pressure testing of pipes or digging test wells at various intervals along its length. The committee will review a flowchart for the assessment of waste transfer systems, to be prepared by staff.

E Question # 4

ATCP 51 and related worksheets should be updated to reflect the latest technical requirements for engineered and related practices used in connection with the odor and other siting standards.

Specifically, the following practices in the siting rule should be associated with the listed NRCS or other standards:

- For composting facilities, reference NRCS Standard 317.
- For anaerobic digesters, NRCS Standard 366.
- For digester substrate storage, NRCS Standard 313 or DNR Industrial waste rules, such as NR 213, Wis. Admin. Code, based on types and amounts stored.
- For manure residual storage, NRCS Standard 313.
- For solid separation, NRCS Standard 632.
- For treatment of liquid waste, NRCS Standard 629 (except for vegetated treatment areas covered under NRCS 635).
- For sand settling lanes, NRCS Standard 632.
- For impermeable manure storage covers, NRCS Standard 367
- For natural crust and bio-covers, [DNR recommendations related to control practices](#) for air emissions.
- For treatment membranes, NRCS Standards 629.

E Question # 5

Existing permanent feed storage facilities should be evaluated to determine whether they (1) are in good condition, and (2) do not present risks of discharging leachate or contaminated runoff to waters of the state. The evaluation should determine if the facility is causing a substantial discharge using the criteria in NR 151.055(3). For facilities constructed within the last 10 years, the evaluation should determine if the facility was designed according to then-existing standards. To establish that a facility is in good working condition a visual inspection should be performed looking for signs of failure (e.g. cracks) or discharge of leachate. The evaluation also should determine the separation distances of a facility from streams, lakes, areas of concentrated flow, wetlands, floodplains and other surface waters susceptible to pollution risks. In terms of groundwater risks, the evaluation should determine the separation distances of a facility to bedrock and saturated soils, and any soils with a high potential for groundwater contamination. Tables 1 through 3 in the NRCS standard 629 should be used as a starting point to determine adequate separation distances.

The evaluation process for feed storage should be consistent with the other evaluation processes for manure storage and animal lots. DATCP should develop a flowchart to outline the evaluation processes. In the case of existing feed storage, the evaluation should be limited to paved facilities and be triggered only when the aggregate of paved storage exceeds $\frac{1}{2}$ to $\frac{3}{4}$ acre (based on typical feed storage areas for a 500 AU dairy operation). The draft flowchart should account for the risk of infiltration and runoff of leachate and contaminated runoff. Specifically, the flowchart should have one or more steps that take into consideration: (1) separation from groundwater, (2) permeability of soil, and (3) the likelihood of runoff reaching surface water. Based on evaluation of these factors, the operator may or may not need to perform repairs, install a perimeter drain, or make improvements to the treatment area. The committee will review another draft flowchart.

ATCP 51 should include management requirements for existing storage facilities including those that are operated without modification. The requirements for clean water diversion and leachate collection in ATCP 51.20(3) should be retained for existing paved facilities that store feed with 70% or more moisture content (cannery, brewers and distillers byproduct feeds). In addition, livestock operators should be required to divert clean water, and follow basic management practices such as waste feed cleanup and proper snow plowing, for all feed storage facilities.

E Question # 6

ATCP 51 should provide more clarity regarding local government monitoring of a permitted facility's compliance with siting standards, including local review of whether engineered practices are properly operated and maintained. DATCP should strongly encourage local governments to monitor compliance, and support these local efforts by developing effective tools and providing training and guidance.

Checklists are effective tools to ensure accuracy and consistency in monitoring livestock facilities for compliance. Checklists need to be specific to either the producer to support self-certification, or the local government to enable consistent review of compliance. Checklists should be practice specific and incorporate the operation and maintenance (O&M) requirements in NRCS technical standards. For example, animal lots should follow the O&M requirements in NRCS standard 635.

While local governments are generally responsible for determining the nature and extent of monitoring activities performed on permitted farms within their jurisdiction, DATCP may consider the option of requiring that all permitted facilities complete and submit a self-certification checklist to local governments every two years. Monitoring of permitted facilities should be coordinated with DNR activities to avoid unnecessary duplication in the submissions required of CAFOs. DATCP should work with local authorities to collect accurate information concerning the implementation of the siting law and the performance of permitted farms, including responding to changes in farming operations and documentation of monitoring results. An additional fee to cover the monitoring costs of local governments might be considered and could help encourage local implementation.

Nutrient Management

NM Question # 1

As part of their review of a permit application under ATCP 51, local governments should have access to [Waste and Nutrient Management Worksheet # 3](#) (390-30 to 32) documentation supporting a nutrient management plan regardless of the size of the livestock facility applying for livestock siting permit. The CAFO exemption ATCP 51.16(4) should be removed. Local governments should be able to request documentation to substantiate that the applicant, who may also hold a WPDES Permit is meeting the requirements for a nutrient management plan under the siting law. The applicant, not the DNR, should be responsible for providing this documentation.

The local government would use this documentation to establish that the land application of nutrients from the livestock facility complies with the NRCS 590 Standard and covers the maximum number of animal units requested in the permit application. Local governments may

request additional information to substantiate the planner's answer to one or more questions on the [NM checklist](#) (390-32) and may deny approval if the documentation does not reasonably substantiate the answer. In a typical case, applicants or their consultants can easily satisfy a local request for documentation by providing the applicant's SnapPlus database and NRCS 590 nutrient management restriction maps from the annual planning process.

NM Question # 2

As part of the [Waste and Nutrient Management Worksheet # 3](#) (390-30 to 32), the applicant must document through their nutrient management plan developed to NRCS 590 Standard that the owned or rented land is adequate to spread the manure generated by the maximum number of animal units authorized under the permit. The annual NM plan updates would include the current animal units at the facility and the acreage necessary to apply the nutrients.

A permit modification process may be further described in the rule to accommodate the needs of operators while maintaining the "maximum animal unit" concept fundamental to the permitting process under the livestock siting rule.

NM Question # 3

[Waste and Nutrient Management Worksheet # 3](#) (390-31 and/or 390-32) should be modified to require that an applicant identifies land spreading acres that are rented, in addition to those that are owned. Maps depicting the rented and owned acres are able to be requested to support Worksheet #3. The committee also discussed that requesting additional information regarding rented acres for spreading manure could be requested.

NM Question #4:

While the NRCS 590 Standard balances agronomic and water quality parameters, it is not intended to result in zero discharge. The proposed revisions to the NRCS 590 NM Standard are expected to better address water quality concerns by imposing winter spreading prohibitions, winter spreading plan requirements, setbacks to direct conduits, and nitrogen restrictions based on sensitive soil types. The proposed revisions to the standard includes a provision for planners to take steps to identify and address locally identifiable runoff risks.

The Committee agreed that the revised 590 NM Standard should be incorporated into ATCP 51.

The Committee discussed whether or not the proposed revisions to NRCS 590 Standard will adequately address concerns raised by some local governments that are not confident that locally identifiable risk areas and potential groundwater problems are being considered when writing nutrient management plans.

The Committee also discussed the lack of understanding and uncertainty in the process by local governments to meet state requirements for adopting more stringent standards to protect groundwater. Among the challenges relate to this is the technical capacity to accurately map affected land. For example, in many cases there is not accurate information to delineate Karst areas or drainage areas contributing to the groundwater conduit.

At its February 2015 meeting, the Committee will likely receive an update on the latest draft of the NRCS 590 NM Standard and may further consider whether the NRCS 590 NM Standard

meets local needs. Members may examine and/or recommend manure spreading provisions in terms of the depth to bedrock, areas that drain to groundwater conduits, and other sites susceptible to groundwater contamination (as defined by NR 151). The group also may examine provisions in NR 243 or local ordinances in this review.

The Committee also discussed groundwater risks from pathogens and whether it is adequately addressed in the NRCS 590 NM Standard.

Odor

There is a hierarchy of source information used to evaluate the numbers assigned to livestock structures for odor generation and control practices. For its review and recommendations, the Committee utilized peer-reviewed, published studies which are considered the gold standard. The Committee also found significant value in published scientific studies that are not peer-reviewed, while literature reviews on certain subjects provided an informative and useful overview. Acknowledging the gaps in research, particularly the limited amount of odor research conducted within the last four years, the Committee considered observational data, and intuitional opinions of experts.

O Question # 1

The following is recommended regarding the odor generation numbers identified in [Worksheet 2 \(Appendix A, Chart 2, 390-25\)](#) for the listed livestock structures.

- For Dairy Free Stall and Beef and Dairy Heifers (slatted floor including floor and pit below), (scrape) and (bedded pack), the current generation numbers of 6, 4 and 2 respectively should be retained since there is not adequate research or other information to make changes, and the definition of housing types should include naturally-ventilated (which is wind-driven and random) and power-ventilated (which is controlled and adjustable). In the case of power-ventilated housing, if ventilation is located on the side further from the property line, this additional separation may be included in the calculation of the odor generation number.
- For Dairy Free Stall and Beef and Dairy Heifers (Alley flush to storage), the odor generation number should be increased from 10 to 20, clarify that this housing type includes natural and power-ventilated housing, and that consideration be given to the use of treated water to flush. This recommendation is supported by observational data, the anaerobic quality of the flush water, and findings from the National Air Emissions Monitoring Study (NAMS), <http://www.epa.gov/agriculture/airmonitoringstudy.html>, a two-year examination of air emissions from poultry, swine and dairy animal feeding operations sponsored by the US Environmental Protection Agency. The odor control practices for these flush systems will be reviewed to ensure that operators have the full benefit of the latest technologies and treatments.
- For Poultry Housing, layers (PLAY), two categories for layers should be created, with different odor generation numbers: high rise housing (birds and litter in same building) should retain the current number of 20 and belt system housing (litter stored separately from birds) should be assigned a number of 1, which is the same number used for broiler

housing with litter. This recommendation is supported by observational data and inference and analogy based on the removal of manure before it goes anaerobic.

- For Waste Storage Facilities (Short term-less than 6 months) and (Long term-6 months or more), the numbers of 13 and 28 should be retained, but the method for predicting odors should be based on surface area, not storage duration. The odor generation number of 28 should be assigned to structures less than one acre and the number of 13 to structures larger than 1 acre. One acre of storage, at average depth, holds manure from a 500 cow dairy for six months. Surface area should be determined based on a measurement of the stored waste with the structure at its maximum operating level (MOL). This recommendation is supported by the science of odor generation, observational data, and opinions of experts. In addition, surface area is less challenging to measure than duration. A higher odor generation number should not be assigned to storage of manure from swine vs. dairy or poultry. It was suggested that the credit for solid separation may need to be adjusted, which will be taken up later.
- Sand and Solids Separation Systems, including sand separation lanes (a.k.a. sand channels) and mechanical separation systems (e.g. screen, friction dryers, and screw presses), should be recognized in calculating an odor score. A new odor generation number of 40 should be assigned to areas of active treatment (e.g. lane where sand is separated, or a building housing mechanical separation equipment) and a generation number of 2 should be assigned to the sand/solids storage areas. In counting the square footage of sand lanes, the new standard should distinguish between intermittent vs. continuous use, and not double count a second lane if it used in alternation with the first lane. The idle lane should be treated as storage. This recommendation is supported by a published study, and analogy to similar structures. For systems enclosed by buildings, appropriate odor control practices, e.g. bio-filters, should be recognized.

Before starting its review of odor control practices, the committee will consider other sources that might merit an odor generation number.