

NR 151 TAC Meeting Notes
December 13, 2016
Coughlin Center Oshkosh, WI

Presenters: Madeline Gotkowitz, Andrew Craig

Attendees: Bill Eberle (for Todd Willer), Roy Lemmenes, Maureen Muldoon, Davina Bonness, Colin Geisenhoffer, Sara Walling, Matt Krueger (for Raj Shukla), Dean Hoegger, Tammy Vassenn (for Jordan Lamb), John Holevoelt, Scott Laeser, Jen Keuning, Kevin Erb, Audrey Boerner, Mitch Breunig, Sarah Gatzke, John Ramsden, Nathen Nysse, Amy Callis, Tim Strobel.

Pam Biersach provided opening remarks with reminders on meeting rules, and a description of the purpose of the meeting.

Presentation: Groundwater Conditions in Carbonate Bedrock Areas, Southwest Wisconsin

-- Madeline Gotkowitz, WGNHS

This presentation provided information on extensive research of the hydrogeology in carbonate areas, primarily in southwest Wisconsin. This presentation can be found on the NR 151 rules changes web page at <http://dnr.wi.gov/topic/nonpoint/nr151strategy.html>.

Key points from the presentation include the following:

- Fracture traces in farm fields in Lafayette Co. are similar to northeast Wisconsin.
- Less than 10% of wells are shallow wells, in the perched zone. Many shallow wells were modified with cross connections.
- Bedding plane fractures extend for kilometers.
- Coliform is an indicator of a pathway to the groundwater, it doesn't mean presence of pathogens.
- Transient non-community wells are better indicator of long term water quality than Stevens Point data set.
- Areas within northeast Wisconsin with thick glacial till are more protective of groundwater.
- Fracture networks are similar, so it is predicted that the rate of transport in southwest is similar to northeast Wisconsin.

- Maquoketa shale layer is very thick and can be more protective. The water below the Maquoketa layer in northeast Wisconsin has a high dissolved solids concentration. Decorah shale layer doesn't present a challenge of drilling through it. In southwest, many wells are not cased below Decorah and may be direct conduits to lower aquifers.
- Erosion of shale layer in the valleys may reduce protection to groundwater.
- All issues that may impact groundwater need to be considered (septic systems, shallow cased wells). Shallow cased wells may be direct conduits to lower aquifers.
- There was discussion by the committee regarding coliform impacted wells in counties with low cow numbers (Eau Claire, Taylor).

Presentation: DNR Administrator Mark Aquino presented a message on behalf of Secretary Stepp regarding recent media coverage of manure digesters. RFP will be issued for constructing digesters in sensitive areas of the state.

Factors suggested by the committee that relate to the definition of 'sensitive areas.'

Type:

Scope statement says 'fractured bedrock.'

Focus on carbonate bedrock.

Carbonate fractures differently than crystalline (north central).

- the committee decided the crystalline bedrock area of the state would not be considered at this time.

Tool / Depth:

County map <5'

State map <50'

Back hoe

-small (10-15')

-large (20-25')

Geoprobe (can go >50')

Well construction reports

Sherill 1978 map (Silurian area)

-0-5', 5-20', 20-50', 50-100'

-see Dave Hart's presentation from November

Parking Lot:

Recognize that short well casing may cause direct conduits of pollutants to deeper aquifers.

Addressing the challenges of implementing nutrient management planning statewide is not a part of the responsibilities of this committee.

Presentation: Comparison of existing manure application prohibitions, restrictions, and setbacks.

-- Andrew Craig, WI DNR

A summary was provided of the existing rules for manure applications between the NRCS 590 and NR 243 CAFO standards. The table summarized in this presentation is available at the NR 151 rule revision website at

<http://dnr.wi.gov/topic/nonpoint/nr151strategy.html> .

Additional resources provided to the TAC but not discussed at the meeting is a comparison of non-manure related rules that address land spreading of material that may contain pathogens. This can be found at:

<http://dnr.wi.gov/topic/nonpoint/nr151strategy.html>

Presentation: Summary of the Kewaunee Co. collaboration recommendations

-- Andrew Craig, WI DNR

A no application recommendation came from the existing CAFO restrictions, although the NR 243 prohibits applications on soils less than 2' to groundwater or bedrock, while the Kewaunee Co. recommendations were no manure on soils less than 1' to bedrock.

The following are suggested practices by the committee that may reduce the transfer of pathogens to groundwater.

- When possible, avoid these areas.
- Filtration
- Breakdown pathogens, treatment (UV exposure, pH adjustment (not feasible with manure), digesters, compost)
- Soil type
- Cover crops (slows downward movement of manure)
- Timing (avoid before rain events)
- Time of the year
- Application rates, split applications
- Adjusting animal diet
- Amount/length of manure storage
- Knowing pathogen content
- Low disturbance manure injection over cover crops/no till fields (manure placement issue at surface, shallow injection).
- Soil microbial treatment of manure pathogens
- More solid manure may reduce pathogen leachate

The following are suggested recommendations for land applying manure in areas of the state with 0-5 ft. of soil over carbonate bedrock.

0-2' -- Bring all farms to CAFO standard (no applications 0-2', winter spreading restrictions)

2-5' – Treat manure to reduce pathogens
No manure <3 ft.
No manure when rainfall predicted

2-3' – Treat manure to reduce pathogens
Reduce application rates

There was discussion regarding when any new rule revisions in NR 151 would go into effect for non-permitted facilities. Counties could pass an ordinance to adopt the new NR 151 rules, essentially matching state standards.

Provide 2001 WI State Lab of Hygiene (WI SLH) lab study titled *Passage of Microorganisms in Septic System Effluents Through Mound Sand in a Controlled Laboratory Environment* to TAC members to help describe the basis for 3' separation requirements to bedrock and groundwater.

Future action item:

The committee agreed that the Kewaunee Co. workgroup recommendations summary would be used as guidance for the development of committee recommendations for applying manure in areas of the state with shallow soils over carbonate bedrock. Next meeting TAC will continue to look at each recommendation for pathogen reduction and decide whether it makes sense to include.