

Kewaunee County Land and Water Conservation Regularly Scheduled Committee Meeting
Kewaunee County Fairgrounds Office August 12th, 2014 9:00 AM

2014-2016 Kewaunee County Land and Water Conservation Committee (LWCC) Members:

John Pagel – Chair (County Board member)
Ron Paider – Vice Chair (County Board member)
Lee Luft – Secretary (County Board member)
Bob Garfinkel – Committee Member (County Board Member)
Andy Wallander – County Conservationist
Clark Reimer (USDA Farm Service Agency Representative)
Aerica Bjorstrom – UW Extension Agricultural Agent

Kewaunee County Land and Water Conservation (LWCD) Staff:

Andy Wallander – County Conservationist
Davina Bonness – Conservationist - Water Quality Specialist
Paul Fredrich – Conservationist - Soils Specialist
Theresa Albrecht – Program Specialist
Theresa Marcusen – LWCD Secretary

Cooperating Agency Members from the United States Department of Agriculture (USDA):

Joe Johnson -USDA Natural Resources Conservation Service District Conservationist
Aerica Bjorstrom - UW Extension Agricultural Agent
Brian Maedke – USDA Animal and Plant Health Inspection Service (APHIS) *Attends as appropriate.*

1) Call to Order: Meeting called to order at 9:00 AM by Chairman John Pagel

2) Roll Call: Committee Members present: John Pagel, Ron Paider, Lee Luft, Bob Garfinkel, Clark Reimer. LWCD and Cooperating Agency Staff present: Andy Wallander. Davina Bonness and Paul Fredrich were present.

3) Approval/Repair of Agenda: Motion to alter the order of items so that Agenda item 6 (Public Comment) and Item 7 (Presentation by Eric Cooley of Discovery Farms could follow item 5) a. was made by Lee Luft and seconded by Ron Paider. Subsequent motion and vote to accept the August 12th agenda as altered was unanimous in favor of the motion.

4) Comments from the Committee Chair on Kewaunee County Water Quality Issues: Chairman Pagel used slides to present his view of the water quality issues facing Kewaunee County. Chairman Pagel pointed out that agricultural operations both large and small have water quality challenges due to seepage as well as run off. Chairman Pagel made the point that Kewaunee County's water problems do not stem solely from "large farms" and that the agricultural community as a whole will need to address our water quality issues. Chairman Pagel pointed out that the both State and Federal agencies are now looking more carefully at the water contamination issues in Kewaunee County. Chairman Pagel indicated that the Environmental Protection Agency (EPA) had recently visited his farm and found issues of concern with "brown water". Chairman Pagel indicated that this was the first visit he has had from the EPA and that his farms would be working with the EPA after the EPA provides the farm with their test results. Chairman Pagel indicated that Kewaunee County faces issues with both ground water and surface water contamination and that we will all need to work together to solve the water quality problems now documented in Kewaunee County.

5a) Introduction and Explanation of Proposed Public Health and Groundwater Protection Ordinance: Andy Wallander reviewed the impetus for the Public Health Protection Ordinance under consideration in today's (August 12th) meeting. Andy cited the significant water quality issues in Kewaunee County and how our shallow soils and Karst bedrock make many areas of Kewaunee County susceptible to groundwater contamination. Andy reviewed the Kewaunee County "Depth to Bedrock" map and showed the Land and Water Conservation Committee members the locations within the county where the soils are 20 feet or less in their depth to bedrock. Andy also discussed the need for maintaining the spreading prohibition dates for shallow soils from January 1 to April 15th. Andy indicated that assistance from the County as well as some funding is available to help farmers determine where the shallow soils are on their lands if they do not know those locations. Andy said he wrote the ordinance with a five foot minimum soil depth to bedrock to gain as much support as possible for passage of the ordinance, however he also indicated he could support the

20 foot to bedrock minimum as this would provide some added safety by eliminating January 1 through April 15th manure applications over soils that were just barely 5 feet in depth and provide for greater filtration for all manure application. Finally, Andy stressed that nothing in our new ordinance is more stringent than current State laws regarding manure application and therefore we may not expect a challenge by the Wisconsin DNR or DATCP. In summation, Andy reiterated that the ordinance under consideration today is concerned with the public health aspects of our water quality concerns in Kewaunee County and the resources we have to address these very serious water quality concerns.

6) Public Comments:

Members of the public made comments as follows:

Jodi Parins: Indicated support for changing the depth to bedrock provision in the ordinance to 20 feet from 5 feet and maintaining the dates of prohibition for spreading on shallow soils from January 1, to April 15. Jodi said the scientific evidence to support the greater depth requirement is very compelling and the latest data support the fact that current standards have not been adequate to stem water contamination in areas of Kewaunee County.

Lynda Cochart: Spoke about her latest well testing which indicates the presence of Salmonella and confirmed bovine fecal content. Lynda and her family can not use their water for drinking and she will not use it to bathe her grandchildren. Lynda has suffered from MRSA. She closed by recommending the minimum depth to bedrock be 20 feet.

Mary West: Told about her families experience with having to dig a new well in 1980 to a depth of 450 feet after well tests indicated her current well had unsafe levels of nitrates and bacteria. Her families well is cased to 380 feet and the latest well tests now show nitrate levels approaching the unsafe limits due to what she has been told are the issues associated with Kewaunee County's fractured bedrock. Mary asked the Land and Water Conservation Committee to consider moving from 5 feet to 20 feet for the depth to bedrock requirement.

Dick Swanson: Dick said that the reports he has place the number of cows in Kewaunee County at ~80,000 and that these cows generate 450 million tons of waste annually. Dick feels that this amount of waste spread over the areas in our county that are actively farmed is excessive and has contributed to the water problems we face today. Dick then advocated for the 20 foot minimum depth to bedrock limit for the ordinance.

Pat Schoenbeck: Pat spoke about wording she saw on a sign at Pagel's Ponderosa that read, "I can, therefore I will". Pat asked that we work together in that same spirit to pass the ordinance and to consider using the 20 foot depth to bedrock measure in the ordinance under consideration today.

Mick Sagrillo: Argued that the DNR rules for land spreading of manure were designed to maximize farm output and not to protect shallow soils. Mick asked the committee to move to the 20 foot soil depth to bedrock measure in the ordinance.

Lynn Utesch: Lynn indicated that DATCP has said that 79% of the farm land in Kewaunee County is under a Nutrient Management Plan (NMP) approved by the DNR. Lynn said that these NMPs were not designed to protect the environment, groundwater or surface water but instead, they were designed to provide an optimal amount of nitrogen and other fertilizer components to maximize crop yields. The result has been disastrous for our ground and surface waters as the most recent test results bear out. Lynn felt we need to focus on restoring tree lines, enhancing grass ways near surface waters and known fissures in our bedrock and monitoring tile lines. Lynn closed with a recommendation to use the 20 foot depth to bedrock measurement in the ordinance under consideration.

Sandy Winnemueller: Sandy spoke in favor of the 20 foot soil depth to bedrock measurement for use in the ordinance and said that without adequate filtering, "what goes on top of the soil will wind up in the water".

John Pabich: John cited the Karst Task Force results that the difference in filtration between 5 feet and 15 feet is significant and that significantly better filtration occurs in soils from 15 feet to 50 feet in depth. John recommended the committee use the 20 foot soil depth to bedrock measure in the ordinance under consideration. John also cautioned that committee members use good judgment regarding when to abstain from a vote in which they may have a significant interest. John did not ask anyone to abstain at this meeting.

William Iwen: Bill noted that he has been part of a "WAV" (Water Action Volunteers) group that performs regular testing of

three main Kewaunee County rivers (the Ahnapee, the Kewaunee and the East Twin rivers). Bill provided the results of the past three years of testing which indicated unsafe conditions (high bacteria levels) in each of the rivers during several of the past years. Given the results of the extensive testing done on these main Kewaunee County surface waters, Bill asked the committee to move to the 20 foot to bedrock soil depth for the new ordinance now under consideration.

Brian Hansen: Brian said that in Wisconsin's earliest days, people were attracted to this area because of its good soils, clean air and water. Brian said a "moral" society existed in which neighbors helped each other and individuals were considerate of their impact on their neighbors. No one could "go it alone" in those days. Brian feels we need to return to that same moral society and to show our concern for ALL community members by stopping and then reversing the damage done to our surface and ground waters.

Chuck Kinnard: Chuck indicated he is trying to be a good citizen farmer. He has more land than he needs to spread the amount of manure his herd produces. Chuck said that Glenn Selner of Kewaunee County told him that 3 feet of good soil was all that was needed to filter nitrates and bacteria from waste water so he was not sure where the requests for a 20 foot soil depth was coming from. Chuck said he may be able to support the 20 foot level but he would need help in determining where the soils on his farm were less than 20 feet in depth. Chuck said he had been disappointed in some of the agricultural cost sharing programs and that some of the larger recipients of cost sharing were now out of business.

Don Niles: Don said he was aware that Kewaunee County has water quality issues and that agriculture has a role to play in working toward improving water quality. Don also felt that different/better kinds of farming strategies could be used to reduce water contamination e.g. alfalfa versus corn. Don also felt that all farms in Kewaunee County should be under a nutrient management plan instead of the 75 to 80% that are under NMPs today. Don thought that better manure management plans on all farms could go some distance in helping reduce the water quality problems in Kewaunee County.

Paula Olson: Paula was at this meeting on behalf of the League of Women Voters and complimented all in attendance on maintaining a civil and polite discourse. In addition, now wearing her private concerned citizen hat, Paula expressed her concern about the impact of farm chemicals on humans and potential chromosome damage. Paula asked for consideration of efforts to improve water quality in Kewaunee County.

Chris McGovern: Spoke about the image of Kewaunee County and the difficulty in attracting people to a county where contaminated wells and polluted surface waters are a major concern. Chris indicated that his girlfriend from Norway would have a difficult time deciding to move to Kewaunee County given the condition of our ground and surface waters. Chris indicated that in Norway, the kinds of water problems we are facing have been prevented or addressed. Chris supports efforts to improve our water quality in Kewaunee County.

Nancy Utesch: Nancy said that the water quality problems in Kewaunee County have reached a full "state of emergency" and that action must be taken now to stem and then reverse our county's water contamination issues. Nancy argued in favor of the 20 foot to bedrock soil level for the ordinance under consideration.

5b and 8) Committee Discussion including Bedrock Depth Limits and Application Restriction Dates: At this point in the meeting Chairman Pagel began the Land and Water Conservation Committee discussion relative to the details of the ordinance under consideration. During the LWCC discussion a number of motions were made, seconded and affirmed to make changes to the ordinance as presented by Andy Wallander. These changes included, removal of most references from the ordinance and placement of these references in a separate listing with the heading, "Kewaunee County Public Health and Groundwater Protection Ordinance, References". Additional changes to increase the minimum depth to bedrock soil depths from five feet to twenty feet were incorporated into the final draft of the ordinance. This includes a minimum of 20 foot soil depth for manure stacking and storage sites with a provision for Kewaunee County Land and Water Department to amend the 20 depth for stacking/storage in specific instances. Language that will direct the Land and Water Conservation Committee to meet on or about March 10th of each year to consider amending the April 15th date if weather conditions in that year favor earlier, safe land spreading.

All suggested changes were approved unanimously by all committee members with one exception. The one exception was a request by Chairman Pagel for a motion to revise the effective dates of spreading prohibition from January 1 through April 15th to January 1 through April 1st. A motion to change the effective dates of the spreading prohibition was denied by a four to one vote with Chairman Pagel casting the dissenting vote.

Following the detailed discussions and the changes noted above, the revised ordinance was put to a vote by the LWCC. A motion to approve the ordinance as revised during our meeting was made by Lee Luft, seconded by Ron Paider and approved unanimously by the full LWCC.

9) Department Reports: No department reports were presented. Andy Wallander introduced the new NRCS (Natural Resources Conservation Service) staff member, Laura Watson, to the LWCC.

- a) **Animal Waste Storage Permits:**
- b) **Farmland Preservation/Standards and Prohibitions Walkovers**
- c) **Cost-Share Agreements**

10) Cooperating Agency Reports: No cooperating agency reports were presented at this meeting.

Resolutions: No action was taken on resolutions by the Committee at this meeting.

Review of Cost Sharing Agreements: There were no cost-sharing agreements presented to the Committee at this meeting.

Travel Authorizations: There were no travel authorizations presented at this meeting.

Next Meeting Dates: Next regularly scheduled KCLWCC Meeting dates are as follows: September 9th at 9:00 AM at the Kewaunee Co. Fairgrounds offices of the KCLWCD.

Approval of Bills: The Committee members approved all bills as presented.

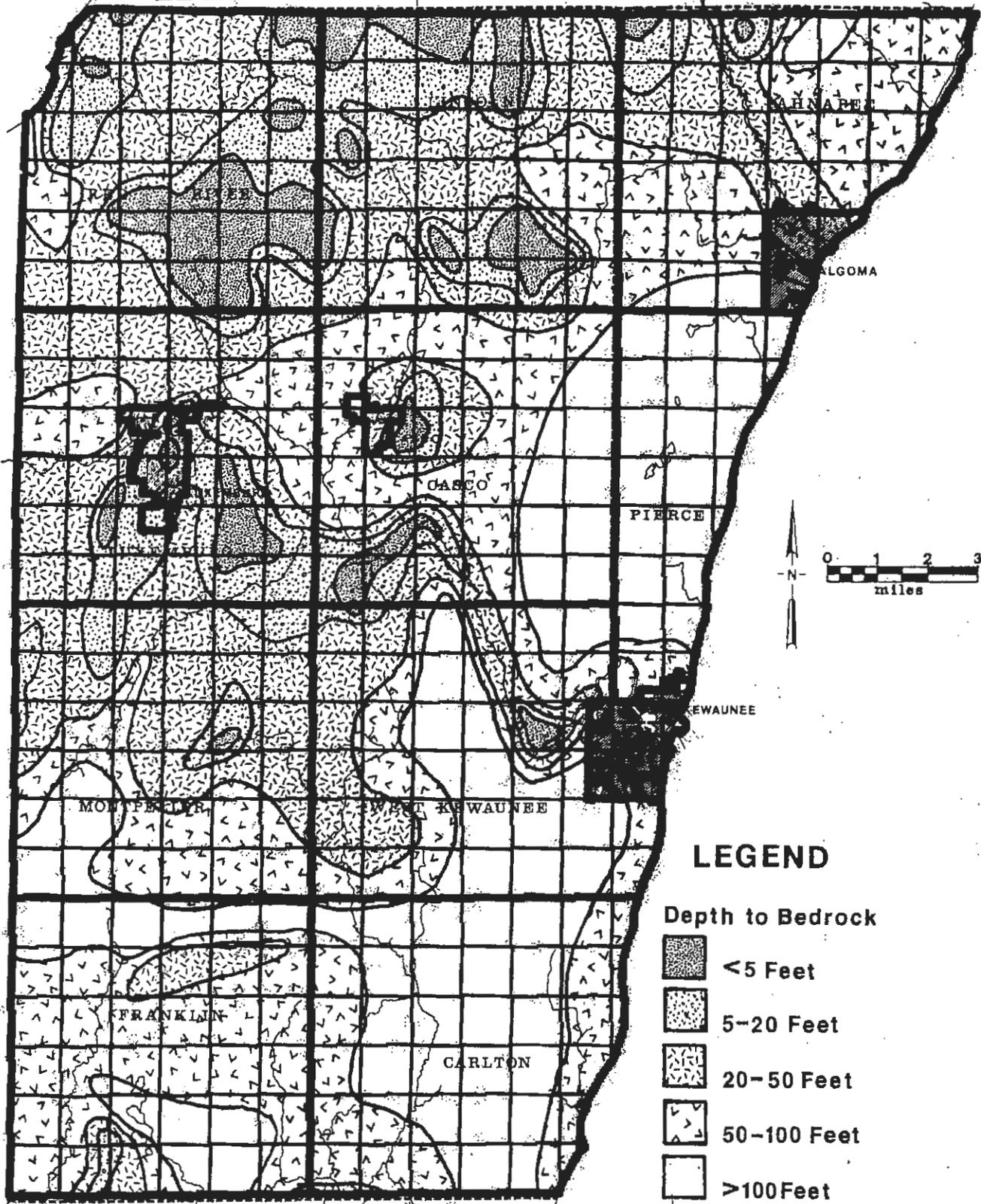
Adjournment: A motion to adjourn was made at 12:15 PM by Ron Paider and Seconded by Bob Garfinkel. The motion passed unanimously.

Note: There are FIVE attachments to these minutes. These attachments are:

- 1) The Kewaunee County Public Health and Groundwater Protection Ordinance (with August 12th KCLWCC amendments shown).
- 2) The list of references used to support the language in the ordinance. This reference list is to become a part of the ordinance. The title of this listing is; Kewaunee County Public Health and Groundwater Protection Ordinance, References".
- 3) The Kewaunee County Depth to Bedrock map.
- 4) The NRCS Standard 313 table for manure stacking.
- 5) A letter from Kewaunee County resident, Dale Goodner as presented prior to the 8/12/2014 KCLWCC meeting.

DEPTH TO BEDROCK KEWAUNEE COUNTY

Figure D



Source: United States Geologic Survey and Wisconsin Department of Natural Resources.

D. Specific Criteria For Temporary, Unconfined Stacks of Manure and Derivatives Outside the Animal Production Area

This includes solid type manure and derivatives that are deposited for subsequent loading and spreading. Waste material having less than 16% solids shall not be stacked in the field. Storage of these materials shall be in facilities meeting the criteria in section V.B.1 and 2. Criteria for unconfined waste stacks are shown in Table 10.

Conservation BMPs shall be used above stacking sites to divert overland flow, and below stacking sites to provide containment or buffering to downstream channels and lakes.

The maximum amount of manure that is stacked on any one field shall be limited to the nutrient needs of fields adjacent to the stacking site in accordance with a 590 nutrient management plan.

Table 10 – Temporary, Unconfined Stacks of Manure and Derivatives Outside the Animal Production Area

1. Waste Consistencies ^{Note 1}		
	> 32% Solids	16% to 32% Solids ^{Note 2}
2. Size & Stacking Period		
Stacking Period	8 months	8 months
Maximum Volume/Stack	≤ 40,000 cu ft.	≤ 15,000 cu ft.
Maximum Number of Stacks/40 acres ^{Note 3}	–	2
Frequency of Stacking Site Use	1 year out of 2	1 year out of 3
3. Hydrologic Soil Groups		
	B or C	B or C
4. Subsurface Separation Distance		
Subsurface Saturation	≥ 3 ft.	≥ 3 ft.
Bedrock	≥ 3 ft.	≥ 5 ft.
5. Surface Separation Distance		
Wells ^{Note 4}	≥ 250 ft.	≥ 250 ft.
Lakes	≥ 1,000 ft.	≥ 1,000 ft.
Sinkholes, or other Karst Features	≥ 1,000 ft.	≥ 1,000 ft.
Quarries	≥ 1,000 ft.	≥ 1,000 ft.
Streams	≥ 300 ft.	≥ 500 ft.
Wetlands and Surface Inlets	≥ 300 ft.	≥ 500 ft.
Areas of Concentrated Flow	≥ 100 ft.	≥ 300 ft.
Land Slope Down Gradient of Stack	≤ 6%	≤ 3%
Floodplain	≥ 100 ft.	≥ 300 ft.
Tile lines	≥ 40 ft.	≥ 40 ft.

Note 1 Refer to AWMFH, Figure 9-1 for consistency values and Chapter 4 for % solids, for specific livestock types.

Note 2 16% to 32% solids represents waste at near saturation conditions where additions of free water from runoff, rain, or snowmelt can result in liquid flow conditions.

Note 3 The separation distance between stacks shall be at least 100 feet.

Note 4 Community water system wells may require larger separation distances (see NR 812).

**KEWAUNEE COUNTY
PUBLIC HEALTH AND GROUNDWATER PROTECTION
ORDINANCE**

ORDINANCE # _____

Section 1: Introduction.

(1) Title. This ordinance shall be referred to as the Public Health and Groundwater Protection Ordinance.

(2) Authority. This ordinance is adopted under authority granted by ss. 59.02, 59.03, 59.70 and 92.11, Wis. Stats.

(3) Purpose and Intent. The purpose of this ordinance is to promote the health and general welfare of the public by protecting, and preventing the contamination of, groundwater quality in Kewaunee County by regulating local land use and management based upon vulnerable geographic considerations such as areas of shallow soil depth to carbonate bedrock, otherwise referred to as shallow Karst landscapes.

It is not the intent of this ordinance to supersede or replace the Wisconsin agricultural nonpoint pollution control performance standards and/or prohibitions found in NR 151, Wis. Adm. Code. The intent of this ordinance is to protect the public's health and welfare by preventing the contamination of the County's groundwater through local regulation of land use and management practices as they pertain to the land application of wastes on shallow Karst landscapes.

(4) Declaration of Policy and Findings.

The Kewaunee County Board of Supervisors recognizes the importance of adopting a precautionary approach to protecting groundwater quality, and that proper land use and management contribute to the protection of groundwater quality; public health and welfare; and the property tax base of the County. The goal of this ordinance is to promote the protection of public health, safety and general welfare of the citizens of Kewaunee County through proper land use and management on geographically vulnerable areas, such as landscapes containing areas with less than 5 feet (60 inches) of soil depth to carbonate bedrock.

As of May 2014, testing of 556 different private rural wells in Kewaunee County, coordinated by the Land and Water Conservation Department and the University of Wisconsin-Stevens Point Environmental Analysis Lab, has shown that 29.7% of the wells sampled throughout the County, were not safe for human consumption due to presence of coliform bacteria and/or nitrates above the human health standard of 10 parts per million. Furthermore, in the specific townships where the largest areas of shallow soil depth to carbonate bedrock occur in the County, the following percentages have been found as far as the amount of wells sampled that were not safe for human consumption due to presence of coliform bacteria and/or nitrates above the

1 human health standard of 10 parts per million: Red River (42.4%), Lincoln (41.7%) and
2 Luxemburg (30.6%).

3
4 Currently, NR 214, Wis. Adm. Code, regulates land application of liquid industrial wastewater,
5 byproducts and sludge; NR 204, Wis. Adm. Code, regulates land application of municipal
6 biosolids; NR 113, Wis. Adm. Code, regulates land application of septic tank and holding tank
7 waste; and NR 151 and NR 243, Wis. Adm. Code, through USDA NRCS Nutrient Management
8 Standard 590, regulate land application of animal waste. According to the November 2013
9 Wisconsin Nutrient Management Update, 79% (second within the state) of Kewaunee County's
10 cropland was included in certified nutrient management plans on file with the Land and Water
11 Conservation Department. Clearly, the County's high local percentages of wells testing positive
12 for bacteria, and having nitrate levels above the health standard for safe human consumption,
13 supports the conclusion that current regulations covering land application of wastes, in general,
14 are inadequate for protecting human health in the County's shallow soil depth to carbonate
15 bedrock landscapes.

16
17 The Kewaunee County Board of Supervisors makes the following findings of fact based
18 on the best available science and monitoring:

19
20 (a) Based upon current records on file with the County, at a minimum, 554,990,508
21 gallons of liquid manure, not including additional other wastes, including septage,
22 biosolids and industrial wastewater are applied to rural lands each year in the
23 County.

24
25 (b) Land applications of the above mentioned wastes significantly impact
26 groundwater quality by:

27
28 (i) Increasing the level of nitrate, particularly in geographically vulnerable
29 areas. ~~See the following~~ Refer to attached References:

30
31 ~~Harter, T., H. Davis, M. c. Mathews, and R. D. Meyer. 2002. Shallow Groundwater~~
32 ~~Quality on Dairy Farms with Irrigated Forage Crops. Journal of Contaminant Hydrology~~
33 ~~55(3-4): 287-315.~~

34
35 ~~Nolan, BT, Hitt KJ (2006). Vulnerability of shallow groundwater and drinking water wells~~
36 ~~to nitrate in the United States. Environ Sci Technol 40: 7834-40.~~

37
38 (ii) Increasing the risk of pathogens and other contaminants, particularly in
39 geographically vulnerable areas. ~~See the following~~ Refer to attached
40 References:

41
42 ~~Anderson, ME, Sobsey MD. 2006. Detection and occurrence of antimicrobially resistant~~
43 ~~E. coli in groundwater on or near swine farms in eastern North Carolina. Water Sci Tech~~
44 ~~54:211-218.~~

45
46 ~~Semenov, Overbeek and van Bruggen (2009) Percolation and Survival of Escherichia coli~~
47 ~~O157:H7 and Salmonella enterica Seroovar Typhimurium in Soil Amended with~~
48 ~~Contaminated Dairy Manure or Slurry. Appl. Environ. Microbiol. 2009, 75(10):3206.~~

49

- 1 (c) Testing of private drinking water wells indicate increased nitrate levels in
2 Kewaunee County as follows. ~~See the following~~ Refer to attached References:

3
4 ~~[http://forwardinstitute.wi.org/2013/04/19/more-than-one-in-five-wells-tested-unsafe-in-](http://forwardinstitute.wi.org/2013/04/19/more-than-one-in-five-wells-tested-unsafe-in-kewaunee-county-recently/)~~
5 ~~[kewaunee-county-recently/](http://forwardinstitute.wi.org/2013/04/19/more-than-one-in-five-wells-tested-unsafe-in-kewaunee-county-recently/)~~

- 6
7 (d) Private drinking water wells have been compromised by other contaminants
8 including hormones and pathogens. ~~See the following~~ Refer to attached
9 References:

10
11 ~~Kate Golden/Wisconsin Center for Investigative Journalism, December 16, 2013,~~
12 ~~Hormonal wells found in State's karst region; dairy farms possible source — See more at:~~
13 ~~<http://www.gazettextra.com/article/20131216/ARTICLES/1312199948>~~

14
15 ~~Ron Seeley, *Who's Watching the Farm? Tracking a Rising Tide of Waste*, Wisconsin~~
16 ~~State Journal, 28 February 2010~~

- 17
18 (e) Nitrates and other contaminants present environmental and public health risks.
19 Scientific research shows that elevated concentrations of nitrate in groundwater,
20 the most prevalent contaminant in Kewaunee County's groundwater, presents
21 the risk of excessive consumption of nitrate in drinking water that has been
22 associated with the risk of methemoglobinemia, or "blue baby syndrome", in
23 humans. ~~See the following~~ Refer to attached References:

24
25 ~~A.M.Fan, V.E. Steinberg, *Health implication of nitrite and nitrate in drinking water: an*~~
26 ~~*update on methemoglobinemia occurrence and reproductive and development toxicity.*~~
27 ~~Regul Toxicol Pharmacol, 23 (1996), pp. 35-43; stomach cancer [C.F. Mason, *Biology of*~~
28 ~~*freshwater pollution*, (4th ed.) Prentice Hall, Harlow, Essex (20020)~~

- 29
30 (f) Based on available data and past implementation experience in Kewaunee
31 County, current generally accepted nonpoint source pollution abatement best
32 management practices do not adequately protect the County's groundwater
33 resources from contamination with excessive nutrients, microbial pathogens, and
34 pharmaceuticals present in waste applied to the land. For example, according to
35 2013 data submitted to DATCP, nearly 80 percent of the county's cropland is
36 covered by nutrient management plans.

37 ~~<http://datcp.wi.gov/uploads/Farms/pdf/2013NutrientMgmtNews.pdf>~~ In addition,
38 current performance standards in NR 151 do not effectively address applications
39 of non-farm wastes on cropland. See NR 151.07(2), Wis. Adm. Code, which
40 excludes the application of industrial waste and byproducts, municipal sludge
41 regulated, and septage from nutrient management performance standard.

- 42
43 (g) In addition to the findings in (f) above, research validates the limited benefits of
44 currently accepted conservation practices in protecting public health and drinking
45 water. ~~See the following~~ Refer to attached References:

46
47 JoAnn Burkholder, Bob libra, Peter Weyer, Susan Heathcote, Dana Kolpin, and Peter S.
48 Thorne. *Impacts of waste from concentrated animal feeding operations on water quality.*

1 Environmental Health Perspectives. 2007: 115(2):308-312. Available online at
2 <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1817674/pdf/ehp0115-000308.pdf>

- 3
4 (h) More specifically, the performance standards, prohibitions, conservation
5 practices and technical standards developed under s. 281.16(3), Wis. Stats., are
6 unable to adequately address relevant public health concerns due to multiple
7 factors including the failure to adequately address vulnerable landscapes. ~~See~~
8 ~~the following~~ Refer to attached References:

9
10 ~~Fry, J. et. Al. Investigating the Role of State Permitting and Agricultural Agencies in~~
11 ~~Addressing Public Health Concerns Related to Industrial Food Animal Production~~
12 ~~10.1371/journal.pone.0089870~~
13 ~~<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0089870>~~

- 14
15 (i) The following geographically vulnerable landscape features create unacceptably
16 high levels of risk for groundwater contamination from waste applications:

17
18 (i) Landscapes containing areas with less than 5 feet (60 inches) of soil depth to
19 carbonate bedrock pose an extreme vulnerability to contamination. (Erb, K. and R.
20 Stieglitz; *Final Report of the Northeast Wisconsin Karst Task Force, February 9, 2007*)

21
22 (ii) There is a high probability of groundwater contamination when waste is
23 applied to frozen, snow-covered or saturated ground in landscapes containing
24 areas with less than 5 feet (60 inches) of soil depth to carbonate bedrock. (Erb, K.
25 and R. Stieglitz; *Final Report of the Northeast Wisconsin Karst Task Force, February 9, 2007*)

26
27 (iii) There is a high probability of groundwater contamination when waste is
28 applied to drainage features that contribute runoff water to landscapes containing
29 areas with less than 5 feet (60 inches) of soil depth to carbonate bedrock. (Erb, K.
30 and R. Stieglitz; *Final Report of the Northeast Wisconsin Karst Task Force, February 9, 2007*)

- 31
32 (j) Adequate land use and management controls offer the potential to more
33 effectively manage the environmental and public health risks associated with the
34 application of wastes on landscapes containing areas with less than 5 feet (60
35 inches) of soil depth to carbonate bedrock.

36
37 (5) Applicability. This ordinance applies to all townships within Kewaunee County that
38 adopt this ordinance by local referendum.

39
40 (6) Construction. This ordinance is to be interpreted liberally to affect the purposes of
41 the ordinance. This ordinance does not abrogate, annul, impair, interfere with, limit, or
42 repeal any existing ordinance or any other power granted by the Wisconsin Statutes.

43
44 (7) Severability. The provisions of this ordinance are severable. If any provision or its
45 application to any person or circumstance is determined to be invalid, that invalidity will
46 not affect any other provision or application that can be given effect without the invalid
47 provision or application.

1 **Section 2: Definitions.**

2
3 In this ordinance:

4
5 “Direct conduits to groundwater”, as per NR 151.002(11m), Wis. Adm. Code, means
6 wells, sinkholes, swallets, fractured bedrock at the surface, mine shafts, nonmetallic
7 mines, tile inlets discharging to groundwater, quarries, or depressional groundwater
8 recharge areas over shallow fractured bedrock.

9
10 “Frozen ground”, as per NR 243.03(24), Wis. Adm. Code means soil that is frozen
11 anywhere between the first ½ inch and 8 inches of soil as measured from the ground
12 surface.

13
14 “Industrial wastewater” means wastewater from food, dairy, and other industrial
15 facilities.

16
17 “Landscapes likely having areas less than 5 feet (60 inches) in soil depth to carbonate
18 bedrock” means those areas depicted on the “Depth to Bedrock Map - Figure D”,
19 developed by the United States Geology Survey and Wisconsin Department of Natural
20 Resources, and previously approved by the Land and Water Conservation Committee,
21 County Board, and the Wisconsin Department of Agriculture, Trade and Consumer
22 Protection as part of the County’s current Land & Water Resource Management Plan –
23 January 2010 through December 2019, hereby incorporated by reference. See “Depth
24 to Bedrock Map – Figure D” attached to this ordinance.

25
26 “LWCC” means the Kewaunee County Land and Water Conservation Committee.

27
28 “LWCD” means the Kewaunee County Land and Water Conservation Department.

29
30 “NRCS” means Natural Resources Conservation Service.

31
32 “Person” means an individual, corporation, partnership, cooperative association, limited
33 liability company, trust, or other legal organization or entity.

34
35 “Saturated soils”, as per NR 243.03(57), Wis. Adm. Code, means soils where all pore
36 spaces are occupied by water and where any additional inputs of water or liquid wastes
37 cannot infiltrate into the soil.

38
39 “Septage”, as per NR 113.03(55), Wis. Adm. Code, means the wastewater or contents
40 of septic or holding tanks, dosing chambers, grease interceptors, seepage beds,
41 seepage pits, seepage trenches, privies or portable restrooms.

42
43 “Sewage sludge”, “sludge” or “biosolids”, as per NR 204.03(55), Wis. Adm. Code,
44 means the solid, semi-solid or liquid residue generated during the treatment of domestic
45 sewage in a treatment works. Sewage sludge includes scum or solids removed during
46 primary, secondary or advanced wastewater treatment processes and material derived

1 from sewage sludge. Sewage sludge does not include ash generated during the firing
2 of a sewage sludge incinerator or grit and screenings generated during preliminary
3 treatment of domestic sewage in a treatment works. *(Note: All three terms defined here are*
4 *interchangeable, and recognized by the LWCD, as they are all in common use.)*

5
6 “Sinkhole” means a point where surface water runoff disappears underground due to
7 the fractured nature of the underlying bedrock.

8
9 “Snow-covered ground”, as per NR 243.03(60), Wis. Adm. Code, means areas of a field
10 covered with any amount of snow.

11
12 “Swallet” means a place where water disappears underground in a limestone region.

13
14 “USDA” means United States Department of Agriculture.

15
16 “Waste” means septage, sewage sludge, sludge, biosolids, industrial wastewater,
17 animal wastes, or any combination of these materials.

18
19 **Section 3: Regulation of Local Soil and Water Resource Management Practices**
20 **Pursuant to s. 92.11, Wis. Stats.**

21
22 (1) Application of this ordinance in any town is subject to approval by a majority of all
23 votes cast in the town in a referendum conducted in accordance with sec. 92.11(4), Wis.
24 Stats., using the following question:

25
26 “Shall the town approve the application of Kewaunee County Ordinance # _____
27 to the town in order to prevent groundwater pollution, protect human health, prevent the
28 spread of disease, and promote the general welfare of the citizens of Kewaunee County
29 by regulating local land use and management practices in the town, specifically through
30 controlling the application of wastes on shallow carbonate bedrock areas as well as
31 direct conduits to groundwater?”

32
33 (2) Land Use and Management Restrictions

34
35 (a) Wastes shall not be mechanically applied to land, or allowed to directly drain to,
36 landscapes likely having areas less than ~~5 20 feet (60 inches)~~ in soil depth to carbonate
37 bedrock during the time period of January 1st through April 15th, unless an exemption is
38 issued, in writing, by the Land and Water Conservation Committee. On or about March
39 10th, the Land and Water Conservation Committee will meet, and may take action to
40 amend the April 15th date mentioned above.

41
42 (b) Wastes shall not be mechanically applied to landscapes likely having areas less
43 than ~~5 20 feet (60 inches)~~ in soil depth to carbonate bedrock when the soil is frozen,
44 snow-covered or saturated; when snow is actively melting such that water is flowing off
45 the field; or precipitation capable of producing runoff is forecast within twenty-four (24)
46 hours of application.

1 (c) Wastes shall not be mechanically applied to direct conduits to groundwater, or
2 allowed to directly drain to direct conduits to groundwater.

3
4 (d) Temporarily stockpiling or stacking of wastes on landscapes likely having areas less
5 than ~~5 20 feet (60 inches)~~ in soil depth to carbonate bedrock shall not occur during the
6 time period of January 1st through April 15th, unless an exemption is issued, in writing,
7 by the Land and Water Conservation Committee. Exempted stockpiling or stacking
8 locations shall comply with the criteria for animal waste found in Table 10 of the USDA
9 Natural Resources Conservation Service Technical Standard 313, hereby incorporated
10 by reference. See "USDA NRCS Standard 313, Table 10" attached to this ordinance.

11
12 **Section 4: Land and Water Conservation Committee Powers.**

13
14 (1) The Land and Water Conservation Committee is authorized to hear and decide
15 appeals where it is alleged there is an error in any decision, determination, or order
16 issued by the County Conservationist, except that this authority does not include the
17 authority to hear appeals from a citation or any decision, determination, or order that
18 may be appealed to the circuit court or that is otherwise subject to judicial review.
19 Appeals under this ordinance will be conducted in accordance with Wis. Stat. Ch. 68.

20
21 (2) The Land and Water Conservation Committee, upon written request by a landowner,
22 may grant exemption to land use and management restrictions in Section 3 upon the
23 submission of a spreading or stacking plan to adequately minimize the public health
24 risks.

25
26 (3) Specific sites may be reviewed by the Land and Water Conservation Committee,
27 upon written request by a landowner, and if contrary depth to bedrock mapping
28 evidence is provided using technology currently found acceptable by the Wisconsin
29 Geological and Natural History Survey, the Committee may, after consulting with the
30 Land and Water Conservation Department, amend the mapping designation.

31
32 (4) The Land and Water Conservation Committee may consult with the county public
33 health department and other appropriate resources to obtain accurate public health data
34 and expertise necessary to the administration of the ordinance.

35
36 **Section 5: Administration.**

37
38 (1) Department Responsibilities. This Ordinance shall be administered by the Land
39 and Water Conservation Department and the County Conservationist shall:

40
41 (a) Keep an accurate record of all inspections, and other official actions.

42
43 (b) Investigate complaints relating to compliance with this ordinance.

44
45 (c) Perform any other duties specified in this ordinance.

46

1 (2) Inspection Authority. The Land and Water Conservation Department is authorized
2 pursuant to Wis. Stat. sec. 92.07(14) to enter upon any lands affected by this ordinance
3 to inspect the land to determine compliance with this ordinance. If permission to enter
4 lands is not given by the landowner, entry may be gained pursuant to Wis. Stat. sec.
5 66.0119. Refusal to grant permission to enter lands affected by this ordinance for
6 purposes of inspection shall be considered a violation of this ordinance.

7
8 (3) Citation Authority. The County Conservationist, or his/her designee, may issue a
9 citation for any violation of this ordinance.

10
11 (4) Referral Authority. The County Conservationist may refer a violation of this
12 ordinance to the County's Corporation Counsel for legal action.

13
14 (5) Other Enforcement Means. Nothing in this section may be construed to prevent the
15 County from using any other lawful means to enforce this ordinance, and does not limit
16 or prevent the County Conservationist from taking other emergency or interim action,
17 including an abatement order, to prevent or mitigate imminent harm to public health and
18 safety or other actions otherwise authorized by law.

19
20 **Section 6: Violations.**

21
22 (1) It is unlawful for a person to violate any provision of this ordinance.

23
24 (2) It is unlawful for any person to knowingly provide false information, make a false
25 statement, or fail to provide or misrepresent any material fact to a county agent, board,
26 commission, committee, department, employee, officer, or official acting in an official
27 capacity under this ordinance.

28
29 (3) It is unlawful for a person to disobey; fail, neglect, or refuse to comply with; or
30 otherwise resist an order issued pursuant to this ordinance.

31
32 (4) A separate offense is deemed committed on each day that a violation occurs or
33 continues.

34
35 (5) The failure of any agent, board, commission, committee, department, employee,
36 officer, or official to perform any official duty imposed by this code will not subject the
37 agent, board, commission, committee, department, employee, officer, or official to the
38 penalty imposed for a violation of this code unless a penalty is specifically provided.

39
40 **Section 7: Penalties.**

41
42 (1) This ordinance may be enforced through civil forfeiture or through issuance of an
43 injunction by the circuit court in an action initiated by the County or Land and Water
44 Conservation Committee. The court may award reasonable attorney fees to any plaintiff
45 in a successful action for enforcement through injunction.

1 (2) A person will, upon conviction for a violation of this ordinance, forfeit not less than
2 \$250 nor more than \$500 for each offense, together with the costs of prosecution for
3 each violation, and may be ordered to take such action as is necessary to abate the
4 offense within a specified time.

5
6 (3) The minimum and maximum forfeitures specified in this section are doubled each
7 time that a person is convicted for the same violation of this ordinance within a 24
8 month period.

9
10 (4) A person who has the ability to pay a forfeiture entered pursuant to this ordinance,
11 but who fails or refuses to do so may be confined in the county jail until the forfeiture
12 and costs are paid, but the period of confinement may not exceed 30 days. In
13 determining whether a person has the ability to pay, all items of income and all assets
14 may be considered regardless of whether the income and assets are subject to
15 garnishment, lien, or attachment by creditors.

16
17 (5) In the event an offense is not abated as ordered, Kewaunee County may take such
18 action as is necessary to abate the offense and the cost of such abatement will become
19 a lien upon the person's property and may be collected in the same manner as other
20 taxes.

Kewaunee County Public Health and Groundwater Protection Ordinance

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We returned to the area 4 years ago (after 34 years out of state). What we have discovered is shocking. I've listened to the impassioned pleas of Kewaunee County tax payers, who only want a safe healthy place to raise their children. I've heard business owners express their fears of declining customer base. I've read the road signs that state a preference for family farms over animal factories. I've even heard some say these signs drive away tourism. The signs are merely stating the obvious. Contaminated water, air, and soils repel tourists.

I have a hunch that 20 feet of soil is inadequate to safely handle the current load. But let's at least cap it at 20 for now... and also cap the number of cows being crowded into Kewaunee County, until we better understand what we're doing to this land.

In 1964 I was privileged to work on a conservation crew at Scarboro Creek. We felt we had accomplished something that summer that was worthwhile and lasting. I imagined the year 2000... fishermen converging on Kewaunee County for the excellent fly fishing in some of Wisconsin's finest trout streams, surrounded by picturesque dairy farms with cows grazing in green meadows. I'm afraid we naive high school biology students had underestimated the power of the almighty dollar.

We can do better... we have to, for our own sake, and that of posterity.


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12 Aug 14

Dear Land and Water Conservation Committee (Kewaunee Co. Board):

A couple of years ago, we needed a new well at my in-laws' cabin near Crivitz. Our old sand point (intake) was at about 26 feet and kept clogging. Our neighbors on both sides have septic drainage fields, and spend a lot of time there, which implies a considerable quantity of "nutrients" would be poised over our drinking water. Twenty feet from that waste accumulation to our water source didn't seem like enough so I asked the well driller for his professional opinion. He said 20 feet of soil was adequate to filter out contaminants, we were at 26, so he figured we'd been safe. Protecting water comes under the heading of "No Brainer." The new well is at 46 feet.

In Kewaunee County the principle is the same, but the potential for impact on ground and surface water (and air quality) is vastly greater. Concentrating non-migratory animals is unnatural and fundamentally problematic. Food has to be shipped in from far and wide. Diseases spread much more readily. What's even worse is the need to dispose of immense and ever accumulating quantities of effluents: manure, medications, chemicals, and hormones. Calling it "nutrient management" doesn't lessen the problem any more than calling malignant cancer a medical condition lessens its impact.

I can not imagine how anybody would seriously consider dumping hundreds of thousands of gallons of liquid manure and effluents over the landscape, much less over bedrock covered by a mere 5 feet of soil. The impact on ground water, neighbors' wells, and surface water would be unavoidable. We can't all live upstream... Tainted ground water, for all practical purposes could be a permanent loss. This cannot be permitted. 20 foot minimum of soil should be just one of many requirements regulating the spreading of effluents. To ere on the safe side, it may take a lot more than 20 feet to protect our precious ground water.

As Dick Swanson said... the problem is simply too many cows on too little land. This unsustainable practice may maximize wealth for a few share holders, but it's at the expense of the true wealth of Kewaunee County... transparent trout streams, refreshing pure well water, clear fresh air, diverse wildlife, clean waves lapping the shining shores of Lake Michigan... and modest sustainable family farms. Other impacts range from increased exposure to virulent pathogens to deterioration of rural roads.

→