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Executive Summary &
List of Recommendations

Executive Summary

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List of Recommendations

Short-term Solutions Work Group

- Consider increasing funding to the state Well Compensation program if changes in policy or statute cause a funding deficit. (Legislative)
- State legislators appropriate for $300,000 in, onetime, special funds to provide reparations, including, providing emergency safe water supplies, treatment systems, and new well construction, to households with wells impacted by offsite livestock contamination. (Legislative)
- Consider taking action to make revisions to Wisconsin State Statute 281 which includes the provision for the Well Compensation program. (Legislative)
  Specific revisions to include:
    - Raising or removing income limitations
    - Clarify potential payment procedures
    - Raise or eliminate any total payment limitations.
    - Alter specific sampling requirements to foster a more efficient process for well owners that may be in a pre-determined Area of Special Well Compensation Eligibility.
    - Include other agricultural contaminants as eligible indicators of livestock contamination. (i.e. nitrate, viruses, and other detectable pathogens)
    - Add specific language that allows for the creation of large Areas of Special Well Eligibility for Well Compensation tied to vulnerability geology and livestock contamination.
- DNR consider beginning an investigation on all E.coli positive samples reported to them from well owners in Kewaunee County. If offsite livestock contamination seems plausible

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investigation will include Microbial Source Tracking (MST) sampling at no cost to the well owner. (DNR)

- Consider increase funding for follow-up sampling and investigation in relation to E coli positive samples in which offsite livestock contamination is the probable cause. (DNR)
- DNR create a brochure/fact sheet detailing bacteria contamination with information on potential sources, contamination definition, remediation, and funding assistance. This document should be shared with all stakeholders including laboratories in Wisconsin certified for bacteria analysis. (DNR)
- Develop a communication plan for distributing to the public the recommendations discussed and findings of the Short Term Solutions workgroup. This may include consideration of coordinating and holding a public meeting or series of meetings and participation by all workgroup members. (DNR)
- If E. coli contamination is detected and evidence suggests livestock contamination or a contamination event occurs, letters are sent to nearby households that are determined to be potentially impacted. (DNR)
- Develop clear guidance at the county and DNR level regarding respective processes for responding to a contamination event. (DNR)
- Prioritize investigating the possibility of streamlining the creation of Special Areas of Eligibility for Well Compensation in Kewaunee County based on the potential for groundwater contamination by livestock due to vulnerable geologies and common land use practices.(DNR)
- Use its authority under Chapter NR738 of Wisconsin Administrative code to provide emergency water supplies to well owners whose wells are impacted by offsite livestock bacterial or nitrate contamination that are located within an area of Special Eligibility for Well Compensation.(DNR)
    - If DNR does not allow for nitrate contamination to trigger compensation in Areas of Special Eligibility for Well Compensation then it should consider modifying the definition of hazardous substance in NR738 to include nitrate contamination from livestock.
- Develop a protocol to immediately provide an emergency supply of drinking water for owners of wells impacted by offsite contamination until another source of safe drinking water can be provided or a long term solution is in place. (County)
- Consider annually making $10,000 and staff available to provide emergency water supplies free of charge to those households with wells impacted by offsite livestock contamination. (County)
- County actively seek and obtain grants and other programs whose funds would be appropriated to paying for a semi-annual well testing program, emergency water supplies, and potential remediation of contaminated wells. (County)
- The Kewaunee County Health Department work with WDNR to create and distribute a letter to all county well owners detailing the importance of private well sampling. This letter should include information about obtaining sample kits, contaminants to sample for, follow up to results, and specific contact information for WDNR and Kewaunee Co. (County)
- Provide informational materials to county well owners that include easy to use contact information lists (i.e. refrigerator magnets) and up to date well safety and maintenance checklists. (County)

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- Develop clear guidance at the county and WDNR level regarding respective processes for responding to a contamination event. (County)
- Community groups are working with local municipal drinking water systems to set up a method for owners of wells impacted by livestock contamination to attain a safe emergency water supply from them as a temporary solution until other recommendations are implemented. (Local groups)
- Agricultural producers consider making emergency water supplies available for owners of wells impacted by livestock contamination. (Local groups)
- Area farmers or other local citizen groups consider forming a group to create a fund to provide emergency water supplies free of charge to those households with wells impacted by offsite contamination. (Local groups)
- Local Non-Profit groups consider contacting United States of Agricultural (USDA) in regards to the USDA "Household Water Well System" Grants. (Local groups)

Compliance Work Group

- Conduct more land application hauling audits/oversight in sensitive areas (DNR and County).
- Staffing - Add compliance staff position(s) (DNR Agricultural Runoff/Nonpoint Specialists) to conduct improved compliance oversight (examples listed below) of existing regulations regarding agriculture in sensitive areas. Fill vacancies in a timelier manner (DNR).
- More stringent review of CAFO emergency land spreading variances (DNR).
- Require that all land applicators have, at minimum, one set of spreading restriction maps and written instructions present for land application sites where manure is actively being applied (DNR & County).
- Targeted focus on proper well abandonment of non-compliant wells or wells no longer used (DNR).
- Further evaluation and review of existing enforcement processes (DNR, County, EPA).
- Fill currently vacant DNR conservation warden position in Kewaunee County (DNR).
- Continue and improve communications and outreach to farmers/landowners from agencies (DATCP, NRCS, County LWCD) regarding:
    - Winter (frozen or snow-covered ground) spreading
    - General cropland best management practices
- Develop guidance that defines and explains "substantial compliance" requirement for CAFO permit reissuance. May include: inspection checklist updates; staff training, template reporting resources, and clearer permit conditions (DNR, EPA).
- Resources/Technology for agricultural compliance staff use and efficiency (internal/non-public) – database of information electronically accessible for multiple compliance agencies (EPA, DNR, County).
- During land application complaint response, DNR and County shall encourage having all associated parties present during complaint inspection (farmer, hauler, crop consultant, complainant).
- Develop communication plan for all landowners who rent land for application of wastes (County/Local groups).
- Improve review and approval process of offsite waste distribution by non-agricultural waste generators into agricultural waste storages (DNR & County LWCD).

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- Develop communication plan for public regarding compliance and enforcement activities being conducted by DNR (agricultural, industrial and septage).

Best Management Practices/Sensitive Areas Work Group

Communications Work Group

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Introduction (History/Background)

Given the unique hydrogeology in certain regions of the state, specifically the karst geology in northeast Wisconsin, a groundwater work group was established to assess issues regarding landspreading and contamination of groundwater and drinking water wells.

The charge of the work group was to work on overarching issues and develop recommendations to reduce risk to public health and groundwater quality that could be applied across Wisconsin.

Northeast Wisconsin

Several stakeholders expressed concern over groundwater contamination issues in northeast Wisconsin, including environmental groups and concerned citizens that have requested the U.S. Environmental Protection Agency investigate contaminated wells in Kewaunee County.

The groundwater work group sought input from these and other stakeholders and partners to help shape recommendations and action plans. These groups include (but are not limited to) farmers, citizens, local officials, agricultural and environmental groups, the Wisconsin Department of Natural Resources (DNR), the U.S. Environmental Protection Agency (EPA), soil and water conservation groups and other state/federal agencies.

Addressing Ground Water Issues in Kewaunee County

Kewaunee County sits in the Lake Michigan basin and is dominantly an agricultural county with approximately 173 farms. Of those farms, 16 are Concentrated Animal Feeding Operations or CAFOs, which are defined as farms with greater than 1,000 animal units.

Since 1983, Kewaunee County has seen a cattle increase from 59,800 to approximately 98,000 total animals, with the number of dairy cows increasing from 30,300 to approximately 45,500 (WI Ag Statistics online).

A majority of Kewaunee County residents solely rely on groundwater for their drinking water, but also have houses with septic systems. Septic systems can be a source of nitrates and pathogens in groundwater, and there are approximately 4,785 in Kewaunee County.

Issue

Intertwined in this agricultural dominant landscape is a unique "karst" dolomite bedrock aquifer. Karst refers to a fractured bedrock encompassed with sinkholes, crevices, caves, cracks, fractures and other features that can provide direct conduits from surface to the groundwater.

Pollutants from agricultural fields or production sites, septic systems, abandoned wells, or even wells constructed with inadequate casing can, in turn, be taken up in water wells, causing the water to be unsafe for drinking and other household uses.

While karst areas are common throughout the eastern and southern parts of Wisconsin, and along the Mississippi River, the susceptibility of this geology to groundwater contamination is dependent on several factors, including soil type and depth. The shallower the soil depth, the increased risk of groundwater and well contamination.

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One tool that manages farm nutrients is a Nutrient Management Plan. Kewaunee County has been proactive in implementing this best management practice, with approximately 80 percent of the cropland – 106,313 acres –under a certified 590 Nutrient Management Plan. However, the county has continued to experience approximately 29 percent of "tested" wells to be unsafe due to high nitrates and/or bacteria. These percentages increase in townships like Lincoln and Red River that have a higher percentage of shallow soils over karst bedrock.

In 2007, the Karst Task Force released its report. The goals of the task force were to determine where impacts on the karst aquifer begin, evaluate the best methods to reduce the impact of agriculture on groundwater quality, prioritize the implementation of available technologies to prevent future problems and to identify the gaps in our knowledge base.

Furthermore, the Karst Task Force identified in their report areas with less than 5 feet to carbonate bedrock as an extreme relative vulnerability to contamination; 5-15 feet as high; greater than 15-50 feet as significant; and greater than 50 as moderate relative vulnerability (Karst Task Report, 2007).

There have also been a number of other research studies conducted in the Karst aquifer. [Need full descriptions here.]

- Lincoln Inter-annual Variability – abstract attached to this email. (DB)
- Mark / Maureen studies – ask them if they would like to add any additional information. (DB)
- DNR funded studies – attach our RFP? (DB)

In April 2015, Kewaunee County citizens voted on and passed by 83 percent the Public Health & Groundwater Protection Ordinance, which promotes the public health, safety and general welfare of the citizens of Kewaunee County through proper land use and management on geographically vulnerable areas. This ordinance regulates land use and management of "All Wastes" on landscapes containing areas with twenty feet or less of soil depth to carbonate bedrock between January 1st and April 15th.

Wisconsin Department of Natural Resources

The DNR served as facilitator for the main work group and additional issue workgroups that formed. Four issue work groups were created: Short Term Solutions; Compliance; Best Management Practices/Sensitive Areas and Communication.

While some recommendations may be implemented by the DNR, many other recommendations may be proposed for CAFO operations, the dairy industry, local governments, other local agencies and state agencies (e.g. health departments), local organizations and the federal government.

Work Groups & Core Issues

Issues the work group focused on included (but were not limited to):

- identification of susceptible areas;
- landspreading/land application practices;
- drinking water wells and groundwater protection;

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- nutrient management plans;
- funding and resources;
- spill response;
- local perspectives; and
- communications.

Timeline

The main workgroup and issue workgroups began meeting in 2015 and finished up in early 2016. Various agencies and stakeholder groups had also identified recommendations to be implemented before this report is published.

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Chapter 1 – Short-term Solutions Work Group Recommendations

During the course of the workgroup's meetings, many recommendations and strategies for addressing the issues faced by individuals with contaminated wells were discussed. Several of these recommendations have already begun to be put into place, while many will need to be considered by one or more of the stakeholder groups listed in the scope document.

Below is listed a compilation of the workgroup's final recommendations. These recommendations are first grouped by theme (Funding, Communication, Specific Solutions, Regulatory, and Prevention/Other) and then by particular stakeholder or stakeholders (Wisconsin State Legislature, Wisconsin Department of Natural Resources, Kewaunee County, local citizen/farmer groups, or a combination of groups) that may consider addressing them.

NOTE: Individual stakeholder participation in this group does not equate to full implementation of any specific recommendation, or complete agreement by the entire stakeholder group.

Funding

The funding of emergency water supplies and contamination remediation for individuals in Kewaunee County was an important topic often discussed by the workgroup. In principle the workgroup agrees that the Wisconsin Department of Natural Resources, Kewaunee County, and potentially local farmers should consider funding initiatives that would include providing emergency supplies, remediation, and/or replacement to households whose wells are impacted by offsite livestock contamination. Specific funding related recommendations made by individual workgroup members are as follows:

State of WI Legislature

1. Consider increasing funding to the state Well Compensation program if changes in policy or statute cause a funding deficit.
2. State legislators appropriate for $300,000 in, onetime, special funds to provide reparations, including, providing emergency safe water supplies, treatment systems, and new well construction, to households with wells impacted by offsite livestock contamination.

WI Department of Natural Resources (DNR)

1. Consider increase funding for follow-up sampling and investigation in relation to E coli positive samples in which offsite livestock contamination is the probable cause.

Kewaunee County

1. Consider annually making $10,000 and staff available to provide emergency water supplies free of charge to those households with wells impacted by offsite livestock contamination.
2. County actively seek and obtain grants and other programs whose funds would be appropriated to paying for a semi-annual well testing program, emergency water supplies, and potential remediation of contaminated wells.

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Local Groups

1. Area farmers or other local citizen groups consider forming a group to create a fund to provide emergency water supplies free of charge to those households with wells impacted by offsite contamination.
2. Local Non-Profit groups consider contacting United States of Agricultural (USDA) in regards to the USDA "Household Water Well System" Grants.

Communication

Another much discussed topic during the workgroup meetings and agreed upon overall recommendation is, improved communication by regulatory agencies to the public on all aspects of the groundwater contamination issues facing residents of Kewaunee County. Group members have discussed many ways to better inform the public, and several of the suggestions have already been put into progress. The specific recommendations from individual group members are below, those in progress are noted.

State of WI

1. DNR create a brochure/fact sheet detailing bacteria contamination with information on potential sources, contamination definition, remediation, and funding assistance. This document should be shared with all stakeholders including laboratories in Wisconsin certified for bacteria analysis.(In progress)
2. Develop a communication plan for distributing to the public the recommendations discussed and findings of the Short Term Solutions workgroup. This may include consideration of coordinating and holding a public meeting or series of meetings and participation by all workgroup members. (In progress)
3. If E. coli contamination is detected and evidence suggests livestock contamination or a contamination event occurs, letters are sent to nearby households that are determined to be potentially impacted. (Partially in progress)
4. Develop clear guidance at the county and WDNR level regarding respective processes for responding to a contamination event. (In progress)

Kewaunee County

1. The Kewaunee County Health Department work with WDNR to create and distribute a letter to all county well owners detailing the importance of private well sampling. This letter should include information about obtaining sample kits, contaminants to sample for, follow up to results, and specific contact information for WDNR and Kewaunee Co. (In progress)
2. Provide informational materials to county well owners that include easy to use contact information lists (i.e. refrigerator magnets) and up to date well safety and maintenance checklists.
3. Develop clear guidance at the county and WDNR level regarding respective processes for responding to a contamination event. (In progress)

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Specific Short Term Solutions

"Short term solutions" have been defined by the workgroup as actions taken in the time period beginning after well contamination is confirmed and until a long term solution is decided upon or put in place. The specific recommendations below are intended to lessen the burden on the owners of wells impacted by offsite livestock contamination and remove as many barriers as possible to efficient and low cost (or no cost) emergency water supplies.

State of Wisconsin

1. DNR consider beginning an investigation on all E.coli positive samples reported to them from well owners in Kewaunee County. If offsite livestock contamination seems plausible investigation will include Microbial Source Tracking (MST) sampling at no cost to the well owner. (In progress)

Kewaunee County

1. Develop a protocol to immediately provide an emergency supply of drinking water for owners of wells impacted by offsite contamination until another source of safe drinking water can be provided or a long term solution is in place.

Kewaunee County Citizens

1. Community groups are working with local municipal drinking water systems to set up a method for owners of wells impacted by livestock contamination to attain a safe emergency water supply from them as a temporary solution until other recommendations are implemented. (In progress)
2. Agricultural producers consider making emergency water supplies available for owners of wells impacted by livestock contamination.

Regulatory

Throughout the course of the meetings the group was briefed on and discussed specific authorities granted WDNR through various State Statutes and Administrative Codes. The following recommendations are intended to affect direct statute or code changes or involve WDNR altering its current implementation policies.

WDNR

1. Prioritize investigating the possibility of streamlining the creation of Special Areas of Eligibility for Well Compensation in Kewaunee County based on the potential for groundwater contamination by livestock due to vulnerable geologies and common land use practices. Kewaunee county residents have requested the entire county or large portions of the county be designated as an Area of Special Eligibility for Well Compensation.
2. Use its authority under Chapter NR738 of Wisconsin Administrative code to provide emergency water supplies to well owners whose wells are impacted by offsite livestock

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bacterial or nitrate contamination that are located within an area of Special Eligibility for Well Compensation.

a. If DNR does not allow for nitrate contamination to trigger compensation in Areas of Special Eligibility for Well Compensation then it should consider modifying the definition of hazardous substance in NR738 to include nitrate contamination from livestock.

WI Legislature

1. Consider taking action to make revisions to Wisconsin State Statute 281 which includes the provision for the Well Compensation program. Specific revisions to include:
   a) Raising or removing income limitations
   b) Clarify potential payment procdures
   c) Raise or eliminate any total payment limitations.
   d) Alter specific sampling requirements to foster a more efficient process for well owners that may be in a pre-determined Area of Special Well Compensation Eligibility.
   e) Include other agricultural contaminants as eligible indicators of livestock contamination. (i.e. nitrate, viruses, and other detectable pathogens)
   f) Add specific language that allows for the creation of large Areas of Special Well Eligibility for Well Compensation tied to vulnerability geology and livestock contamination.

Other Recommendations

Throughout the course of the workgroup meetings many topics were discussed that stretched outside the formal scope of the groups focus. Many of these topics involved some kind of contamination prevention methods in reference to manure storage and spreading, which will be specifically covered by the Sensitive Area and Best Management Practices group.

Other recommendations outside the scope of this workgroup revolved around providing funds for county well owners to regularly sample their wells, and educating the public about low cost sampling tools that may help them determine if their wells are being impacted. It was the opinion of the majority of the participating members that the work of this workgroup be continued and expanded into a "Long Term Solutions in Relation to Groundwater Contamination in Kewaunee County" workgroup.

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Chapter 2 – Compliance Work Group Recommendations

During the course of the workgroup's meetings many recommendations and strategies for addressing the issues faced by individuals with contaminated wells were discussed. Some of these recommendations may have already begun to be put into place.

Below is listed a compilation of the workgroup's final recommendations. Those recommendations perceived to have high potential for improving/protecting groundwater quality were ranked first, with recommendations lower on the list perceived to have less potential for improving/protecting groundwater. Fifteen members participated in the ranking).

NOTE: There were 14 recommendations that reached consensus/near consensus (11 total) or had 2/3 majority in agreement (3 total). Additional recommendations (19 total) either did not have 2/3 majority of members in agreement or the work group decided not to carry the recommendation forward.

Also, individual stakeholder participation in this group does not equate to full implementation of any specific recommendation, or complete agreement by the entire stakeholder group.

1) Conduct more land application hauling audits/oversight in sensitive areas (DNR and County).

2) Staffing - Add compliance staff position(s) (DNR Agricultural Runoff/Nonpoint Specialists) to conduct improved compliance oversight (examples listed below) of <u>existing</u> regulations regarding agriculture in sensitive areas. Fill vacancies in a timelier manner. Additional EPA, DATCP, County, NRCS staff may also be relevant to fulfilling some of the duties below.
    - Voluntary training and outreach/education for farmers, citizens, haulers, crop consultants, landowners, etc.
        - Review new maps, rules and regulations, and best management practices
        - Summarize and discuss land application audit findings
        - Spill prevention and response planning
    - Joint-agency training (EPA, DNR, NRCS, DATCP, County) for consistency and efficiency
    - Review nutrient management plans (CAFO)
        - A minimum of 10 detailed reviews/audits per year
        - Confirm all land is under agreement
        - Ensure all direct conduits to groundwater are mapped
        - Confirm there are no overlapped fields in multiple CAFO NMPs
    - More frequent inspections of land application sites
        - Target before, during, after rains, first snows and night time spreading
        - Include medium farms
        - Use well testing research information to determine which areas to focus
        - Do audits in mapped shallow soils areas
        - Do both scheduled and unannounced inspections
    - More frequent production site inspections of CAFO farms (1/year) by DNR.
        - Verify permit conditions are being met.

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    - Verify no changes have occurred since last inspection that are adversely affecting surface or groundwater.
- More thorough review of permit-required record-keeping regarding CAFO production sites by DNR (annual reports, spill response plans, evaluations, etc.)
- Inspection of medium sized livestock production sites not yet inspected by County LWCD.
    - This would be to identify potential surface or groundwater discharge issues at the production site.
    - May determine if any medium farms require a CAFO permit.
- More timely complaint response and enforcement.

3) More stringent review of CAFO emergency land spreading variances (DNR).
    - Do they have adequate storage (or need to build more or reduce herd size)
    - Store instead of land apply
    - Only for emergencies, not poor weather conditions

*[**Note:** Recommendations 2 & 3 were tied in ranking average.]*

4) Require that all land applicators have, at minimum, one set of spreading restriction maps and written instructions present for land application sites where manure is actively being applied (DNR & County).
    - Inform haulers and farmers of requirement
    - Discuss any equivalent options in lieu of multiple maps (field markers, tillage, etc.)

5) Targeted focus on proper well abandonment of non-compliant wells or wells no longer used (DNR).

6) Further evaluation and review of existing enforcement processes (DNR, County, EPA). Considerations:
    - Second offense for same violation should move to Notice of Violation stage not another Notice of Noncompliance letter (DNR).
    - Noncompliance with County regulated state programs (NR151, Farmland Preservation, etc.) results in County enforcement notice and potential loss of tax credits.

7) Fill currently vacant DNR conservation warden position in Kewaunee County.

8) Continue and improve communications and outreach to farmers/landowners from agencies (DATCP, NRCS, County LWCD) regarding:
    - Winter (frozen or snow-covered ground) spreading
        - Explain why winter spreading is a concern.
        - Explain best management practices if winter spreading is necessary.
        - Provide resources for grant funding or technical assistance.
    - General cropland best management practices
        - Explain benefits of no till, cover crops, filter strips, etc.
        - Cost share funding

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- Technical assistance
- Spreading on sensitive areas

9) Develop guidance that defines and explains "substantial compliance" requirement for CAFO permit reissuance. May include: inspection checklist updates; staff training, template reporting resources, and clearer permit conditions (DNR, EPA).

*[**Note:** Recommendations 8 & 9 were tied in ranking average.]*

10) Resources/Technology for agricultural compliance staff use and efficiency (internal/non-public) – database of information electronically accessible for multiple compliance agencies (EPA, DNR, County).
    - Nutrient management plan information
    - Pending compliance/complaint response status

11) During land application complaint response, DNR and County shall encourage having all associated parties present during complaint inspection (farmer, hauler, crop consultant, complainant).
    - Promote understanding / communication
    - Copy all on follow-up letters and reports
    - Not required as not always practicable

*[**Note:** Recommendations 10 & 11 were tied in ranking average.]*

12) Develop communication plan for all landowners who rent land for application of wastes (County/Local groups). The communication plan may include:
    - Information on regulations regarding land application of wastes
    - Example landowner agreements between farmers and landowners
    - Any potential liabilities of landowner

13) Improve review and approval process of offsite waste distribution by non-agricultural waste generators into agricultural waste storages (DNR & County LWCD).
    - Develop guidance/communication plan between DNR wastewater and DNR CAFO programs to ensure any approvals for acceptance meet all standards/conditions.
    - Develop guidance / communication plan between DNR wastewater and County LWCD to ensure storages proposed to accept offsite wastes are built to standards protective of groundwater.
    - Review by County and DNR should include whether nutrient management plans address how additional waste volumes taken will be land applied according to standards.
    - Development of additional resources for tracking compliance (funding dependent).
        - GIS tracking system
        - Template forms

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14) Develop communication plan for public regarding compliance and enforcement activities being conducted by DNR (agricultural, industrial and septage).
    - Discuss how to report/what to report (factsheets)
    - How to share complaint resolution / findings with public
    - Online accessible database
        - CAFO permits and application information
        - CAFO nutrient management plans
        - CAFO engineering information
    - Stepped enforcement actions
        - Enforcement letters (NON, NOV, etc.)
        - DOJ referral case summaries and outcomes once completed/settled

Other Recommendations

15) Septic Systems - Additional funding necessary to:
    - Properly identify systems that may be marginally acceptable by performing onsite soils verification by the county and certified soil tester (would determine any necessary upgrades for protection of groundwater)
    - Expedite inventory of those septic systems not yet verified/reviewed

16) Perform audits of soil and/or manure test analysis for farms in sensitive areas (DNR or County).
    - DNR or County staff to observe sampling and obtain split samples from crop consultants to be analyzed for verification

17) EPA should review all Kewaunee County CAFO nutrient management plans (one-time); Assist DNR with future NMP reviews as necessary.

18) Consideration of cumulative effects of proposed farm expansions that result in increased waste being applied in areas determined to be susceptible for groundwater contamination.
    - Additional requirements in permit and NMP for protection of groundwater

19) Revise code NR 243 (CAFO) to be more protective of groundwater (land application).
    - Different regulations for land application of wastes in defined sensitive areas (may include special areas of well compensation eligibility)
    - Require additional reporting by CAFO farms
        - Condensed and updated spreading plan (NMP) be submitted to DNR and County just prior to manure spreading.
        - More frequent "near-time" reporting of land application activities
    - Groundwater monitoring at land application sites
    - Clarify or increase emergency winter spreading approval requirements
    - Clarify that multiple CAFOs cannot have the same field in their NMPs

20) Revise code NR 243 (CAFO) to be more protective of groundwater and surface waters (production site).

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- Require in CAFO WPDES permits compliance monitoring provisions that evaluate conditions in receiving waters on a sampling schedule.
- Groundwater monitoring at production sites
- Surface water sampling to wetlands and surface waters.
- Requirement/clarification that CAFOs shall not accept septage waste in storages. Staff may take samples to verify compliance with this requirement.

21) Require CAFOs using permanent manure irrigation systems monitor groundwater at land application sites per NR 214.

22) Penalty and forfeitures changes for violations (any regarding waste applications) - Ask legislature to propose increase of penalties /forfeitures for noncompliance. Examples:
    - Discharge to waters of the state monetary forfeiture of $250,000 with $100,000 held in escrow for "safe water supply fund" to cover both short and long term solutions; $50,000 to LWCD to cover costs of local enforcement, cleanup and clean water supplies
    - Spreading/spill violations should have monetary forfeitures after one warning
    - More than one permit violation per year prohibits reissuance of WPDES permit
    - Citation issuance for permit violations
    - Increase minimum / maximum permit violation forfeiture amount in Wis. Stat. § 283.91 to increase the deterrent effect.

23) Develop and enforce the penalties for crop consultants when nutrient management plans are incomplete or inaccurate.

24) Develop requirements and enforce penalties for manure haulers (third-party) when spreading regulations are not followed and/or land application results in runoff to surface waters or contamination of a private well. May include hauler audits scorecard/ranking system and required certification/training program.

25) Require third party inspections of land application. Qualified individual/company would inspect and report on land application activities to DNR.

26) Bond posting to allow the DNR to hire contractors to quickly address spills and runoff events. May result in more timely response actions in cases where the responsible party was not responding appropriately.

27) To better oversee compliance via inspections of land application sites, require pre-notification of planned land application activities by farms when spreading in areas deemed "extremely vulnerable" in the 2007 NE WI Karst Task Force report (< 5' to carbonate bedrock areas).
    - Email or phone line notification with who, when, where, how much, etc.
    - Accessible by DNR and County LWCD
    - No obligation for fields to be inspected or additionally approved/reviewed (if already in approved NMP)

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28) Resources/technology for compliance resources for regulated entities – Funds and additional staff (DNR, DATCP, County, Crop Consultants).
    - Create field reference template for nutrient management plan restrictions and setbacks for farmer and custom manure applicator use. This resource may include the follow information:
        - Verification of conduits to groundwater on or near land application sites (existing wells, unabandoned wells, rock pile features, etc.)
        - Restricted spreading areas and setbacks on maps
        - Maximum spreading rates listed on map or other reference
        - Required spreading methods (immediate incorporation, limited rates for surface applications, etc.)
        - Equipment calibration methods
    - Improve land application restriction map legends to include more information on the requirements of the features/colors identified on maps to assist in compliance with limitations on restricted features. Examples:
        - Rate restrictions (Nitrogen restricted, depth to bedrock or groundwater limitations, etc.)
        - Setback areas (Waste prohibition, limited rates, etc.
        - Incorporation timeline (immediate, 48 hours, etc.)

*[**Note:** Team determined that multiple resources exist and are continuing to be improved (example: Snap Plus 15, Snap Maps); team recognized it is also difficult to have one template being that multiple options may work in an equivalent manner depending on personal preferences of users.]*

29) Discipline any crop consultants not abiding by code of ethics (CCA board, DATCP).

*[**Note:** Team recognized there is a system in place for this recommendation. DATCP stated that no formal complaints have been brought forth and ultimately it would be up to CCA board to decertify.]*

30) EPA should be lead authority on CAFO farms in Kewaunee County.

*[**Note:** Recommendation unclear and more of an opinion.]*

31) Discontinue the DNR practice of addressing exceedances of groundwater quality standards by including alternative concentration limits for production site groundwater monitoring systems in CAFO WPDES permits.

*[**Note:** Recommendation unclear with no practicable alternatives listed in original recommendation.]*

32) Require crop consultants to attend annual training/update meeting(s) regarding code of ethics and responsibilities for developing and updating NMPs.

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*[**Note:** Team recognized that crop consultants are already required to obtain continuing education credits. Team recommended that this may be a communication team topic in which to promote that training sessions for crop consultants have some focus on code of ethics.]*

33) Increase fees for CAFO permits and nutrient management plans to cover the cost of additional staff/resources. Current fee structure:
    - CAFO permit application (new or reissue) fee $0
    - CAFO nutrient management plan review fee $0
    - CAFO engineering plan review fee $0
    - Annual CAFO permit maintenance fee $345

*[**Note:** Team determined although additional funding is necessary to better promote compliance and protection of groundwater quality, it was not appropriate to determine where that funding comes from.]*

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Chapter 3 – Best Management Practices/Sensitive Areas Work Group Recommendations

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Chapter 4 – Communication Work Group Recommendations

The main purpose of the Communications Work Group was to provide a plan and strategy to help with outreach and dissemination of the recommendations in the final report. With the completion of this report, the work group's effort is complete.

However, during the various work group meetings, members agreed there were communication issues that could be addressed via additional recommendations.

Below is a list of those additional recommendations along with the communication plan for the final report.

NOTE: Individual stakeholder participation in this group does not equate to full implementation of any specific recommendation, or complete agreement by the entire stakeholder group.

Final Report Communications

Goals

- Get the word out. To communicate/reach out to key stakeholders, audiences, etc. about the proposed recommendations of the work group.
- Increase Awareness. To increase public's awareness and understanding of the work group and the proposed recommendations as they affect the various stakeholders through potential legislative, administrative and/or voluntary changes (DNR, local governments, DATCP, etc.).
- Improve Information Access. Provide the public and media better access to information about the work group's process and the final report/proposed recommendations

Objectives

- Develop communication plan.
- Develop process to complete final report.
- Release final report and possible news release, post web content, etc.
- Reach out to key stakeholders with final report via key communication tools.
- Follow up, evaluate implementation.

Audiences

- Local citizen organizations, general public
- County boards/local governments
- Local gov't. associations – WI Counties Ass. WI Towns Ass. (+ local chapters), WI League of Muni's
- Environmental groups – MEA, Clean Water WI, Clean Water Acton Council, etc.
- UW-Extension ag. agents
- WI Ass. of professional ag consultants (WAPAC) (statewide mtg. March 10-11)
- Manure haulers (statewide mtg. January 26-27 WI Dells)
- Certified Crop Advisors
- PDPW

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- Groundwater task force
- Well drillers/pump installers
- EPA
- Certified bacteria laboratories within WI (50)
- County and state health departments (WALDAB)
- State agencies, legislators, etc.

Communication Tools

Presentation of Final Report Recommendations		
What	**When**	**Who**
Create powerpoint	3/24	JP
Create generic invite message	3/24	
Assign presenters	3/24	Comm. Team
Schedule presentations, make invites	4/1	
Presentations complete	4/15	

- Media – news release/newspapers
- Ag Media – Ag Radio, UW-Extension newsletter, etc.
- Organizational web sites
- Direct contact
    - Letters to key stakeholders
    - In-person meetings, presentations (see chart above)
    - Emails
- DNR GovDelivery (i.e. e-newsletter)
- Social media
- County extension Facebook page?
- WI Land & Water database

Time Line

- February-March: Conclude meetings, review/approve recommendations
- March-April: Develop final report
- April-May: Review/approve final report
- May: Release final report to target audiences via comm. tools (see above)

Other Communication Recommendations (From the three work groups)

State Agencies

- DNR create a brochure/fact sheet detailing bacteria contamination with information on potential sources, contamination definition, remediation, and funding assistance. This document should be shared with all stakeholders including laboratories in Wisconsin certified for bacteria analysis. (DNR)

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- If E. coli contamination is detected and evidence suggests livestock contamination or a contamination event occurs, send letters are sent to nearby households that are determined to be potentially impacted. (DNR, DHS, DATCP)

- Develop communication plan for public regarding compliance and enforcement activities being conducted by DNR (agricultural, industrial and septage).
    - Discuss how to report/what to report (factsheets)
    - How to share complaint resolution / findings with public
    - Online accessible database
        - CAFO permits and application information
        - CAFO nutrient management plans
        - CAFO engineering information
    - Stepped enforcement actions
        - Enforcement letters (NON, NOV, etc.)
        - DOJ referral case summaries and outcomes once completed/settled

Kewaunee County

- The Kewaunee County Health Department work with DNR to create and distribute a letter to all county well owners detailing the importance of private well sampling. This letter should include information about obtaining sample kits, contaminants to sample for, follow up to results, and specific contact information for DNR and Kewaunee Co. (In progress)
- Provide informational materials to county well owners that include easy to use contact information lists (i.e. refrigerator magnets) and up to date well safety and maintenance checklists.
- Develop clear guidance at the county and WDNR level regarding respective processes for responding to a contamination event.

Multiple Stakeholders

- Develop a communication plan for distributing to the public the recommendations discussed and findings of the Short Term Solutions workgroup. This may include consideration of coordinating and holding a public meeting or series of meetings and participation by all workgroup members. (DNR, County, Local Groups)

- Inform haulers and farmers of requirement that all land applicators have, at minimum, one set of spreading restriction maps and written instructions present for land application sites where manure is actively being applied. (DNR, County)

- Develop clear guidance at the county and DNR level regarding respective processes for responding to a contamination event. (DNR, County)

- Continue and improve communications and outreach to farmers/landowners from agencies (DATCP, NRCS, County LWCD) regarding:
    - Winter (frozen or snow-covered ground) spreading
        - Explain why winter spreading is a concern.
        - Explain best management practices if winter spreading is necessary.
        - Provide resources for grant funding or technical assistance.

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- General cropland best management practices
  - Explain benefits of no till, cover crops, filter strips, etc.
  - Cost share funding

- During land application complaint response, DNR and County shall encourage having all associated parties present during complaint inspection (farmer, hauler, crop consultant, complainant) to promote understanding and communication.
  - Copy all on follow-up letters and reports
  - Not required as not always practicable

- Develop communication plan for all landowners who rent land for application of wastes (County/Local groups). The communication plan may include:
  - Information on regulations regarding land application of wastes
  - Example landowner agreements between farmers and landowners
  - Any potential liabilities of landowner

- Develop guidance and communication plans between DNR programs (wastewater and ag runoff) as well as between DNR, County and LWCD to improve review and approval process of offsite waste distribution by non-agricultural waste generators into agricultural waste storages (DNR & County LWCD). This will help ensure that any approvals for acceptance meet all standards/conditions and ensure storages proposed to accept offsite wastes are built to standards protective of groundwater.

Additional Communication Recommendations

[Some of these duplicate what's above, but I didn't want to exclude anything from Russ' chart until everyone could compare the two sets of recommendations. A.S.]

Group	Description	Audience	Formats	Who?
	Communication Plan (CP) to inform public about the recommendations	Public; Ag producers; media; well owners; legislature; EPA	Report; Presentations; Press releases; Web; Fact sheets	Comm Team/OC
Short Term	What if you have a contaminated well? Brown water/smell; Total coliform +; e-coli+/ contacts	Well Owners	Fact sheets; Web; Brochure; Ref mag	DG / OC
	What we do in response: internal and external	Staff; Well Owners	Guidance; Web; Brochure	DG / WT/ RR/ OC
	Eligibility of emergency water provided by the state: how; contacts	Well owners; Staff		RR/DG/OC

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	Letters to neighbors if e-coli +/ contacts	Households;	Letter; Ref mag	RR/DG/OC/KC
	Communication Plan (CP) to inform public about the recommendations	Public; Ag producers; media; well owners; legislature; EPA	Report; Presentations; Press releases; Web; Fact sheets	Comm Team/OC
	Info on bacterial contamination	Public; Well owners	Fact sheet/Web	DG/OC
	Info on well sampling; why; where to get kits; how to sample; where to send; how often	Well owners	Fact sheet; Web; Brochure; Feg mag	DG/ OC
	Info on well compensation program	Well owners; Well drillers; financials; county; staff	Fact sheet; Brochure; Training	DG/ OC/ HR
Compliance	Training/outreach for on regs and regs.; BMPs, Audit/Inspection findings; Spill prevention; Response planning	Farmers; Crop consultants; Haulers; Finacials; Citizens	Presentations; Work Books	WT/ DG/ RR/ OC/ HR
	Well abandonment info: when; how; who; reporting	Well owners; Well drillers	Fact sheets; Brochures	DG/ OC
	Continue/Improve communication on winter spreading; BMPs; Sensitive area restrictions	Farmers; Haulers	Fact sheets; press releases; training;	WT/ DG/ RR/ OC
	Guidance on substantial compliance determinations	Staff	Guidance	WT
	Public database on CAFO NMPs; Permits; Engineering;compliance outcomes	Public; Farmers; Staff	Database; Web	WT/ LE/ TS
	CP for landowners renting land for spreading on regs;	Landowners; staff	Fact sheets; letter	WT/ LE

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example agreements; potential liability			
Improve communication between WQ , WT and county on industrial landspreading	Staff; County	TBD	WQ/ WT/ KC
CP for public on what incidents to report; how; resolution	Public	TBD	WT/ OC

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APPENDICES
Appendix A – Work Groups

Short-term Solutions Work Group

Purpose

The purpose of this workgroup is to review and define issues faced by individuals in Kewaunee County who have wells which are contaminated by bacteria and/or nitrate. The scope of the workgroup activities will address concerns from these and other concerned citizens and seek to find avenues to provide a safe drinking water source, and/or clear information for those with contaminated drinking water to quickly and efficiently obtain a safe drinking water source.

Expected Outputs / Products

The workgroup will compile and review existing statutes, administrative rules, and policies, creating clear and understandable guidance detailing the current tools available through the state and county.

The workgroup will also outline the limitations of potential sources of aid available through the state or county. The members of this group will then work together to create a list of recommendations or suggestions to address these outlined limitations. The workgroup will seek consensus on all recommendations. Where consensus is not possible, the final guidance will include majority and minority perspectives.

The recommendations are intended for: impacted citizens, DNR, and other interested stakeholders, including, but not limited to, local government officials.

Composition

The workgroup consists of invited participants representing a cross-section of interests concerned with the groundwater quality issues observed in Kewaunee County. The workgroup does not have any formal authority.

Workgroup Members

- Kyle Burton - DNR Drinking Water and Groundwater (chair)
- Russ Rasmussen - DNR Policy Advisor
- Marty Nessman - DNR Drinking Water and Groundwater
- Jodi Parins - Kewaunee County
- John Pagel - Kewaunee County, Pagels Ponderosa
- Davina Bonness - Kewaunee County Conservationist
- Cindy Kinnard - Kewaunee County Health Department
- Dick Swanson - Kewaunee County
- Sara Williams - Midwest Environmental Advocates

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- Lynn Utesch - Kewaunee CARES
- Tom Davenport (or representative) - US EPA
- Andy Wallander - Kewaunee County
- Ron Heuer - Kewaunee County
- Dale Konkol - Door County

Workgroup Ground Rules

1. Contribute to an environment of civility.
2. Focus is on learning and problem solving.
3. Remain open to new concepts/information/perspectives different from your own.
4. Everyone will participate and take ownership of group projects and, when appropriate, sub-groups will be assigned to work on specific activities.
5. Focus on underlying interests rather than positions.
6. Make statements, then invite questions and comments.
7. Share all relevant information.
8. Test assumptions and inferences.
9. Everyone has a chance to speak without interruption.
10. No one should dominate the conversation or topic.
11. Disagree openly with any member of the group.
12. Agree on what important words mean.
13. Jointly design ways to test disagreements and solutions.
14. Discuss difficult issues.
15. Keep the discussion focused.
16. Do not that cheap shots or otherwise distract the group.
17. Make decisions by consensus; where consensus is not possible, document majority and minority perspectives.
18. Exchange relevant information with other stakeholders.
19. The workgroup owns all ideas and concepts; do not talk disrespectfully about team activities in public.
20. Recognize regional/geographic differences and avoid singling out individual entities.
21. At their own discretion, decide whether or not to respond to comments and questions from the audience.

Guidelines for non-Members who attend Workgroup meetings:

- Comments are always welcome to be submitted to the workgroup chair at [HYPERLINK "mailto:Kyle.Burton@Wisconsin.gov"].
- Written comments may be submitted at all meetings.
- As time permits, audience members will have opportunities to share comments and concerns with the workgroup, consistent with the ground rules listed above.

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Compliance Work Group

Purpose

To review and evaluate the current compliance structure regarding currently regulated activities that may affect groundwater. This includes activities regarding well installation/compliance, septic system compliance, municipal and industrial land application, septage waste land application and farm generated manure and process wastewater land application.

The scope of this workgroup is to provide information for stakeholders to better understand the regulatory structure and ability of regulatory entities to monitor compliance as well as discuss potential tools and outreach methods to promote compliance.

Expected Outputs / Products

Composition

The workgroup consists of invited participants representing a cross-section of interests concerned with the groundwater quality issues observed in Kewaunee County. The workgroup does not have any formal authority.

Workgroup Members

- Casey Jones - DNR Runoff Management (chair)
- Davina Bonness - Kewaunee County Land Conservation Department (LCD) -
- Cheryl Burdett - US EPA
- Kyle Burton - DNR Drinking Water and Groundwater
- Paul Cornette - Kewaunee County Dairy Farmer
- Ryan Debroux - Debroux Custom, Manure Applicator
- Sara Geers - Midwest Environmental Advocates (MEA)
- Nick Guilette - AgSource, Certified Crop Advisors
- Dean Hoegger - President of Clean Water Action Council
- Mark Jenks - Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP)
- Joe Johnson - Natural Resource Conservation Service (NRCS)
- Tressie Kemp - Midwest Environmental Advocates (MEA)
- Dale Konkol - Door County Land Conservation Department
- Mary Ann Lowndes - DNR Runoff Management
- Lee Luft - Kewaunee County Resident, County Supervisor, Land and Water Conservation Committee
- Dean Maraldo - US EPA
- Martin Nessman - DNR Drinking Water and Groundwater Section
- Jodi Parins - Town of Lincoln resident
- Bill Phelps - DNR Groundwater
- Judy Polczinski - DNR Environmental Enforcement
- Russ Rasmussen - DNR Policy Advisor
- Heidi Schmitt-Marquez - DNR Industrial Wastewater
- Glenn Selner - Kewaunee County Zoning Department

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- Sara Walling - DATCP

Workgroup Ground Rules
[Did you guys have any set up? Should we use Kyles??? A.S.]

Guidelines for non-Members who attend Workgroup meetings:
[Same question here: Did you guys have any? Or should we delete??? A.S.]

Best Management Practices/Sensitive Areas Work Group

Purpose
To define sensitive areas that are high risk for groundwater pollution and to recommend management practices that may help reduce or eliminate groundwater pollution and the associated public health risk within these sensitive areas.

Expected Outputs / Products
The workgroup will compile and review existing information and research, and produce written guidance and recommendations that delineate sensitive areas and management practices within sensitive areas that may contribute to groundwater pollution and increased public health risk.

The workgroup final product will include, but not be limited to, narrative summaries along with maps, tables or matrices identifying sensitive areas and recommendations for use (or non-use) of practices intended to reduce or eliminate groundwater pollution in sensitive areas. The workgroup recommendations are intended for: DNR, local government officials, agricultural producers and other interested stakeholders located in these sensitive areas, including, but not limited to private residents, business owners, etc.

Composition
The workgroup consists of invited participants representing a cross-section of interests concerned with the groundwater quality issues observed in Kewaunee County. The workgroup does not have any formal authority.

Workgroup Members

Workgroup Ground Rules

Guidelines for non-Members who attend Workgroup meetings:
[Same question here: Did you guys have any? Or should we delete??? A.S.]

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Communications Work Group

Purpose

To discuss how to take the recommendations/items from the work groups and determine how best to communicate/reach out to our key stakeholders, audiences, etc., so they receive the information in an understandable and accessible way.

Expected Outputs / Products

The expected product of the Communications Work Group was a communication plan and strategy to help with outreach and dissemination of the recommendations in this final report. With the completion of this report, the work group's effort is complete. In addition, work group members agreed to provide recommendations addressing additional communication issues.

Composition

The workgroup consists of invited participants representing a cross-section of interests concerned with the groundwater quality issues observed in and around Kewaunee County. The workgroup does not have any formal authority.

Workgroup Members

- Andrew Savagian - DNR Office of Communication (chair)
- Tom Bauman – DNR Runoff Management
- Davina Bonness - Kewaunee County Conservationist
- Tom Davenport (or representative) - US EPA
- Sara Geers - Midwest Environmental Advocates
- Callie Herron – UW Discovery Farms
- MaryAnne Lowndes - DNR Runoff Management
- Jodi Parins - Kewaunee County
- Russ Rasmussen - DNR Policy Advisor
- Tony Reali – Calumet County

Workgroup Ground Rules

Guidelines for non-Members who attend Workgroup meetings:
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