

Farm Services Agency Environmental Assessment of Fanter Farms
Public Comments Submitted to: **John W. Gehrke**, Farm Loan Chief, Illinois FSA
Submitted in response to the FSA's Inclusion of USEPA Recommendations related to
the Mahomet Sole Source Aquifer

The following written public comments were prepared for the community that lives and works around the proposed location of the Fanter Farms hog facility in Mason County, Illinois and focus specifically on the Sole Source Aquifer portion of the FSA EA.

Background on Public Comments related to the Mahomet Sole Source Aquifer:

At the time the public was first offered the opportunity for public comment, the draft Environmental Assessment did not have an entry for the section on the Mahomet Aquifer because the FSA was waiting on a response from the US EPA. We were assured by John Gehrke of the FSA that the public comment period would be held open and we would have an opportunity to submit public comments on the Mahomet portion of the EA prior to finalization. That assurance failed to be upheld by the FSA and the first time the public has read anything regarding the Mahomet is after the EA was completed and the FONSI was determined. We have sent a letter memorializing the chain of events including several emailed assurances from John Gehrke that the public comment period would remain open until we could see his interpretation of the USEPA's assessment and recommendations.

The final EA includes statements taken from the USEPA Region V letter dated August 12, 2021 (signed by Vanessa Bosscher Sole Source Aquifer Coordinator – Groundwater and Drinking Water Branch) regarding the USEPA's recommendations on how to protect the Mahomet Sole Source Aquifer from pollution generated by proposed Fanter Farms hog facility. We have sent both formal and informal requests for documents to USEPA Region V to obtain copies of all letters and communication between John Gehrke at the FSA and the person(s) he worked with at Region V regarding the Mahomet Aquifer. Weeks later, we are still waiting for copies of materials from the USEPA.

It is our opinion that the person(s) at USEPA Region V was not knowledgeable about how deep pit hog barn manure systems work. We also believe that many of the USEPA recommendations are either redundant of state law, are not practical or feasible, or have no clear path to a legally enforceable permit under the state Livestock Management Facility Act (LMFA) or a NPDES operating permit. Unless these recommendations can somehow be placed in a legal and enforceable document, such as an operating permit, then the recommendations are meaningless and should not be relied upon to substantiate a Finding of No Significant Impact.

The public is not aware if the FSA will include these recommendations into the loan documents and thus provide an enforceable pathway through the lending process. If so, the public needs to see those loan documents and be provided a reliable method of through a complaint/violation system between public citizens and the Farm Services Agency. We are unaware of the existence of such a system at the FSA.

In our review of the Notice of Intent to Construct submitted by Josh Fanter to the IDOA, there is no mention of any special protections incorporated into the design, construction, maintenance, and operation of the waste management facilities that would be reflective of the USEPA's recommendations. If the USEPA and/or the FSA knows otherwise, the public would like copies of those documents that were relied upon, including any email and telephonic communications, while developing these recommendations.

The following public comments will focus on the August 12, 2021, Vanessa Bosscher (USEPA Region V) letter to John Gehrke (FSA) that summarizes the USEPA recommendations to protect the Mahomet Sole Source Aquifer from the storage and land application of millions of gallons of liquid swine manure wastewater and sludges.

The USEPA recommendations letter is dated August 12, 2021. The Illinois Department of Agriculture approved the Notice of Intent to Construct the Fanter Farms hog facility in March 2021. That IDOA approval was based on the permit application submitted and amended in March 2021 – months before the FSA invited the USEPA to provide recommendations. Much of the USEPA recommendations rely upon various Illinois state laws and regulations reflected in numerous citations throughout the five-page letter. The problem is that none of those recommendations were adopted by the applicant in the Fanter Farm's NOITC to the IDOA and thus are not part of the IDOA approval. Nearly every recommendation has no pathway to enforcement and/or is impractical, if not impossible for the public to rely upon a state regulatory agency to ensure those activities are actually implemented at the Fanter Farms hog facility.

The five page USEPA letter does not contain the word "Peterville" which is a town located west of the proposed facility where nearly 50 inhabitants rely upon shallow groundwater wells in the Mahomet Aquifer for their drinking water source.

The USEPA letter only mentions the words "water well" one time on page 4 of 5. The word "shallow", as in shallow groundwater, is mentioned once in a footnote that is a quote from state regulations.

We, the nearby and potentially adversely impacted community, contend that the portion of the FONSI that relies upon the USEPA recommendations as proof of protection of the Mahomet Sole Source Aquifer is a decision by FSA based on inaccurate information as discussed below.

1. Point Source versus Non-Point Source - Page 1 of 5 (EA page 118 of 279), Ms. Bosscher wrote:

“To protect the groundwater beneath and adjacent to the proposed hog barn and associated manure application sites, the owner(s) and operator(s) must implement best management practices. A list of recommended best management practices is provided below.

The livestock operation and animal waste management must be designed, constructed, and operated so as to minimize nonpoint source pollution entering groundwater.”

Public Comment: The Clean Water Act identifies livestock production facilities as point sources and land application of manure as non-point sources of pollution.¹ Is the USEPA referring to minimizing groundwater pollution during land application of hog manure? Is the USEPA trying to make a distinction between a hog facility with less than 1,000 animal units (thus not a CAFO) and thereby not assigning a point source categorization to the Fanter Farms hog facility? What are the design standards that the applicant should use to satisfy this USEPA recommendation?

2. Best Management Practice (BMP) PE Certification – Page 2 of 5 (EA page 119 of 279), Ms. Bosscher wrote **[emphasis added]**:

“A registered professional engineer should certify the construction of the manure storage facility (concrete pit) and the mortality management and composting areas, to **minimize leaching** or discharge of liquids to the groundwater. Prior to this certification, the applicant must inform the engineer that the location is within an EPA-designated Sole Source Aquifer. Design certification has been provided in accordance with state requirements intended to prevent seepage or groundwater contamination (e.g., 8 IAC 900.502(c); 510 ILCS 77/13(b)(3); and 35 IAC 50 I .402(g)).”

Public Comment: The Illinois Livestock Management Facilities Act (LMFA) is quoted by the USEPA as proof that the construction of the manure storage facility would minimize leaching or discharge to the groundwater. It is important for both the USEPA and the FSA to recognize that the LMFA was not written to provide special protections to Sole Source Aquifers. The actual language of the LMFA uses the term ‘prevent’ whereas the USEPA uses the term “minimize.” Title 8 IAC 900.502 is the portion of the LMFA related to siting and construction.² The paragraph 900.502(c) referred to reads as follows **[emphasis added]**:

¹ See: CAFOs are point sources, as defined by the [CWA \[Section 502\(14\)\] \(PDF\)](#) (3 pp, 132 KB, [About PDF](#)). To be considered a CAFO, a facility must first be defined as an AFO, and meet the criteria established in the [CAFO regulation](#). <https://www.epa.gov/npdes/animal-feeding-operations-afos>

² See: Section 900.502 Siting Restrictions and Additional Construction Requirements at <https://www.ilga.gov/commission/icar/admincode/008/008009000E05020R.html>

“A new non-lagoon livestock waste handling facility constructed in an area where aquifer material is present within 5 feet of the bottom of the facility shall be designed to ensure the structural integrity of the containment structure and to **prevent seepage** of the stored material to groundwater. Footings and underlying structure support shall be incorporated into the design standards of the storage structure in accordance with the requirements of Section 4.1 of the American Society of Agricultural Engineers (ASAE) EP393.2 or future updates. [510 ILCS 77/13(b)(3)] Construction standards and specifications shall be utilized as set forth in Subpart C of 35 Ill. Adm. Code 506.”

In fact, the USEPA recommendation to *minimize* rather than *prevent* is less stringent than the LMFA when aquifer material is located within five (5) feet of the bottom of the waste handling facility. Was the USEPA aware that aquifer material was identified in the soil boring log as occurring from the surface of the land to 13 feet below grade? The Frank and West Soil Investigation Report submitted to the IDOA as part of the NOITC states in the Conclusion Section that:

“The soil boring conducted as part of the site investigation indicated that there is aquifer material present within five feet of the planned bottom of the non-lagoon livestock waste handling facility;”

Did the USEPA know that during the permit application review process the applicant increased the depth of the deep pit liquid swine manure storage pit from a depth of 8 feet to 10 feet and that no new soil borings were performed to identify/classify the subsurface materials located five feet below the bottom of the manure pit? In other words, the original soil boring was to a depth of 13 feet below grade (8 feet for the deep pit plus 5 feet below deep pit floor). The community asked IDOA repeatedly to make the applicant do a new soil boring to identify subsurface materials below the new 10 foot deep design – or to a depth of 15 feet below grade. No new soil boring has been performed to our knowledge.

The USEPA recommendation related to the applicant informing the engineer of the presence of the Mahomet as a Sole Source Aquifer must be confirmed with the Illinois Department of Agriculture to see if there is any evidence that such information was discussed during the design of the hog facility. A review of the engineering drawings the applicant submitted to the IDOA does not contain reference to special protections or knowledge of the Mahomet Aquifer. A word search of the NOITC for the term “Mahomet” indicates that word is not found in the documents. Did the USEPA have a discussion with the IDOA about how this recommendation could be tracked via the LMFA permitting process and the Design Engineer’s Certification Statements?

The LMFA citation 8 IAC 900.502(c) refers to ASAE EP393.2 (or update) Section 4.1 as the technical standard for concrete pits for liquid swine manure. Section 4.1 of EP393.2 provides zero information about concrete pit integrity or specific construction standards to protect any aquifer, much less a Sole Source Aquifer.³

³ See: https://agri.idaho.gov/main/wp-content/uploads/2017/08/ASAE_EP393point3_2000.pdf

“4 Laws and regulations

4.1 All federal, state, and local laws, rules, and regulations governing the use of manure storages shall be followed. Included are those pertaining to local zoning, flood plain management, shoreland protection, and buildings. Necessary approvals and permits for location, design, construction, and operation shall be secured.”

In fact, the ASAE EP393.2 focuses almost exclusively on the design of traditional earthen and/or plastic lined waste storage lagoons, not concrete deep pits. If the USEPA was somehow relying upon this LMFA regulation and the cited ASAE standard to protect the Mahomet Aquifer, then that reliance was poorly placed.

3. Best Management Practice (BMP) Pit Integrity Inspection – Page 2 of 5 (EA page 119 of 279), Ms. Bosscher wrote:

“We strongly recommend the owner/operator (or designee) complete periodic inspections of the concrete floor and walls of the manure management facility, such as each time the manure is emptied for land application. Additionally, pump-outs should be inspected periodically to ensure covers are intact, so as to prevent inflow of rainwater and ensure adequate freeboard is maintained to prevent manure overflow.”

Public Comment: Although we agree that inspection of the concrete floors and walls would be the best way to determine if the manure management structure has not cracked or otherwise lost its integrity – this recommendation is not realistic. In order to actually observe cracks and disintegration of the concrete inside the manure pit, the operator would have to remove all the hogs, drain all the liquid manure, use machinery to lift and move the sections of slatted floor, power wash the residual liquid manure and solids from the walls and floors, install bright lights for observation, and the person(s) inspecting the concrete should be using protective clothing and respirator/supplied air.

We believe this recommendation did not consider how complex and dangerous such an activity would entail and thus should not be used by the FSA as a basis of FONSI. Did the USEPA contact the IDOA and the Illinois Environmental Protection Agency (IEPA) to determine whether these recommended inspections (internal floors and walls and the pump-outs) were incorporated into the LMFA permit for Fanter Farms? Will the IEPA have legal authority to ensure that the two types of inspections occur according to the USEPA recommendations? How will that work legally if the language is not included in a state-issued permit?

What is “adequate freeboard” that the USEPA refers to that would prevent manure overflow? Did the USEPA confirm that the Fanter Farms hog facility will be designed, constructed, maintained, and operated with that freeboard depth? Is the USEPA relying upon the LMFA to dictate the number of inches/feet that is “adequate freeboard”? Will the IDOA/IEPA incorporate the USEPA’s idea of adequate freeboard into a state enforceable permit requirement?

4. Best Management Practice (BMP) Perimeter Drain – Page 2 of 5 (EA page 119 of 279), Ms. Bosscher wrote:

“We understand that perimeter foundation drain monitoring (e.g., for nitrate-N, phosphate-P, chloride, sulfate, ammonia-N) will be required by the State of [Illinois (State) upon initiation of the project and strongly recommend that such monitoring be continued periodically as long as the facility is in operation.

Ongoing perimeter foundation drain monitoring is recommended to help identify, and quickly mitigate, any animal waste impacts to groundwater as the barn and foundations age (e.g., if cracks develop in the concrete or the waterstop material). We note that the plans call for water from the perimeter foundation drain to be gravity-drained or pumped to daylight; the owner/operator or designee should periodically inspect the foundation drain receiving outlet for animal waste impacts.”

Public Comments: The beginning of this USEPA recommendation starts with “we understand” – what documents were provided to the USEPA that they used to understand the perimeter tile drainage system to be used at the Fanter Farms hog facility? The recommendation also says “we note that the plans call for...” – does that mean Vanessa Bosscher was given the engineering plans and specifications for the Fanter Farms hog facility? Who provided those plans – was it the FSA, the applicant, or the IDOA? Did those engineering designs show an 8 foot deep pit (February 2021 design) or a 10 foot deep pit (March 2021 design)? Did those documents include the soil boring (See Figure 1)?

The USEPA says they understand the monitoring will be required by the State of Illinois without saying which agency (IDOA and/or IEPA) – upon *initiation* of the project. Does that mean the USEPA was told by a state agency (IDOA and/or IEPA) that baseline perimeter tile sampling will occur, but that long-term sampling is not required in the permit and thus that is why USEPA is recommending continued monitoring for the life of the facility?

The LMFA regulations that contains the language about perimeter tile monitoring is found at 8 IAC 900.511, but is only triggered if the facility is *required* to monitor as follows:⁴

“Section 900.511 Perimeter Drainage Tubing Sampling, Analysis and Reporting Procedures

a) For non-lagoon livestock waste handling facilities required to install and sample perimeter drainage tubing pursuant to 35 Ill. Adm. Code 506, the requirements of this Section shall be met.

⁴ See: <https://www.ilga.gov/commission/jcar/admincode/008/008009000E05110R.html>

1) The owner or operator of a livestock waste handling facility shall sample the liquid from the monitoring port prior to the livestock waste handling facility being placed into service and at least quarterly thereafter, if any liquid is available. The samples shall be analyzed for the following items: nitrate-nitrogen, phosphate-phosphorus, chloride, sulfate and ammonia-nitrogen.“

The facility would be *required* to have perimeter tiles if there is a seasonal high water table as described in 35 IAC 506 as follows **[emphasis added]**:⁵

”c) **In areas where the seasonal high water table may encroach upon the bottom of the livestock waste storage structure**, a perimeter foundation drainage tubing shall be installed as follows:

1) The drainage tubing must be located at a horizontal distance that provides sufficient drainage **to maintain the water table elevation below the bottom of the footings**.

2) The tubing shall drain freely to a surface water outlet or other subsurface drainage outlet.

3) The tubing must include a sampling port to allow the monitoring, sampling, and reporting of any discharge from the tubing in accordance with the requirements of 8 Ill. Adm. Code 900.Subpart E.”

4)The owner or operator shall take necessary measures to divert the discharge from the drainage tubing, away from surface water, if monitoring results pursuant to subsection (c)(3) of this Section indicate that the tubing is discharging livestock waste. Such measures shall include, but not be limited to, diverting the flow to crop production area naturally lower in elevation than the livestock facility, or providing a manhole with a gate valve that could be closed in an emergency.

We have scoured the Fanter Farms NOITC looking for the words ‘seasonal high water table’ and could not find a reference that such a phenomenon was determined by the applicant. The site investigation report by Frank and West describes the purpose of their site investigation was limited to the following:

“The purpose of the site investigation was to determine the following: 1) whether aquifer material is considered present (or not present) within five feet of the planned bottom of the non-lagoon livestock waste handling facility; 2) whether the proposed facility is to be located within the floodway or flood fringe of a 100-year floodplain; and 3) whether the proposed facility is to be located within a karst area or within 400 feet of a natural depression in a karst area.”

Regardless, the NOITC includes engineering drawings that show a perimeter tile will be installed near the foundation of the manure pit. The rules require monitoring every

⁵ See: <https://www.ilga.gov/commission/jcar/admincode/035/035005060C03040R.html>

quarter during the operation of the facility. USEPA stating that they ‘strongly recommend’ the exact monitoring that is required by state regulations is meaningless if used to provide additional protection for a Sole Source Aquifer – these requirements would apply to any hog facility built in Illinois that was built in shallow groundwater.

This USEPA recommendation implies that if contamination is found in the perimeter tile drainage that the result would include “quickly mitigate” without any discussion of what the mitigation might entail. Which state agency would be responsible for requiring this mitigation? Has USEPA discussed with that agency the process that would be used to identify why there was contamination and follow through with the operator until the leaks or other causes of contamination were controlled?

Our concern is that these recommendations are simple statements without much consideration to the time and effort needed to implement the recommendation nor any guidance on reliable methods to determine efficacy.

We do wonder how the USEPA rectifies the fact that if the perimeter tile drainage is discharged to the surface and that liquid is found to be contaminated with swine manure wastewater, then the facility would have an illegal discharge of waste from the production area. Why wouldn’t the USEPA consider that discharge to be contrary to the Clean Water Act prohibition of discharges from the production area?


5. Best Management Practice (BMP) Notification of Release – Page 2 of 5 (EA page 119 of 279), Ms. Bosscher wrote:

“The owner/operator should notify the State regarding any indication of manure or animal waste release to groundwater (510 ILCS 77/18).”

Public Comment: Again, the USEPA is recommending an activity that is already required by state law and therefore offers no additional protection of the Mahomet Sole Source Aquifer. The wording in 510 ILCS 77/18 is as follows:⁶

“(510 ILCS 77/18)
Sec. 18. Reporting release of waste.
(a) An owner or operator of a livestock waste handling facility shall report to the Agency any release of livestock waste from a livestock waste handling facility or from the transport of livestock waste within 24 hours after discovery of the release. Reporting shall not be required in the case of a release of less than 25 gallons that is not released to the waters of the State or from a controlled and recovered release during field application. For the purposes of this subsection (a), waters of the State do not include small temporary accumulations of surface water from precipitation or irrigation systems. The procedure for reporting releases shall be adopted by the Agency by rule.”

⁶ See: <https://www.ilga.gov/legislation/ilcs/documents/051000770K18.htm>

 Frank & West Environmental Engineers, Inc. 1023 S 2nd Street Phone: 217/679-7361 Springfield, IL 62704 Fax: 217/679-8362		FIELD BORING LOG PAGE 1 OF 1	
SITE FILE NO. 21-113B1 COUNTY MASON BORING NO. 1 WELL NO.			
SITE NAME FANTER FARMS SURF. ELEV. 0' TOTAL DEPTH 13'			
FED. ID. NO. AUGER DEPTH 13' ROTARY DEPTH			
QUADRANGLE NW 1/4 OF NE 1/4 SEC.3 T.20N R. 8W DATE: START 03/10/21 FINISH 03/10/21			
BORING LOCATION SEE ATTACHED PLOT PLAN		PERSONNEL G- H- JMN I-	
DRILLING EQUIP AUGER		SAMPLE NO. SAMPLE TYPE RECOVERY PID READING PENETROMETER	
ELEV.	DESCRIPTION	DEPTH	REMARKS
	YELLOWISH BROWN SAND	1'	
		2'	
		3'	
		4'	
		5'	
		6'	
		7'	
	GRAYISH BROWN SAND	8'	BOTTOM OF PROPOSED PIT ● 8' B.G.S.
		9'	
		10'	
		11'	
		12'	
		13'	
		14'	
	E.O.B. ● 13'		

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Figure 1 – March 10, 2021, soil boring taken assuming 8 foot deep pit and total depth of soil boring 13 feet below grade. No mention of high seasonal water table.

6. Best Management Practice (BMP) Staging of Manure – Page 2 of 5 (EA page 119 of 279), Ms. Bosscher wrote:

“Any pre-application staging of manure outside of the manure waste management system (concrete pit) should be limited to very short durations and only within areas that will limit seepage into groundwater (e.g., concrete pad) and that will limit stormwater run-off or run-on (e.g., berms / covers). Likewise, mortality management compost, which is planned to be on an inwardly-sloped concrete pad with a cover to prevent stormwater influx, should be properly managed so that contaminants will not leach into groundwater.”

Public Comment: We are particularly curious as to how the USEPA thinks liquid swine manure wastewater can be ‘staged’ on a concrete pad. It is a liquid, not a solid and thus could not be contained on a pad with or without a cover – possibly with a berm, but who would do such a thing in the first place? Why even propose it as a possibility on land overlying the most shallow end of a Sole Source Aquifer?

With respect to the design of the mortality management compost facility, the NOITC submitted to the IDOA does not contain engineering designs for a swine mortality compost facility. If the mortality compost design was not included in the NOITC permit application that was submitted and finally amended in March 2021, then it has not been evaluated and is not included in the March 2021 IDOA approval for construction.

The public has reviewed the IDOA permit files and from that review has garnered no knowledge that mortality would be handled on-site nor did we find any indication of the number of swine mortality expected to occur during normal operations. The engineering drawings dated March 2021 do not include a mortality composter at Fanter Farms.

Who provided information to the USEPA that a swine mortality compost facility will be constructed at Fanter Farms? Is the USEPA aware that such a facility was not proposed to the IDOA for approval?

The Illinois Dead Animal Disposal Act (Section 90.110 Onsite Disposal) includes siting restrictions for dead swine composting **[emphasis added]**:⁷

“e) Disposal of Swine by Composting. Persons disposing of swine by means of composting shall comply with the following requirements:

- 1) Surface water shall be diverted away from the composter.
- 2) Location shall be in an area where runoff will not contaminate water supplies or allow leachate to discharge into streams, ponds or lakes.

⁷ See: <https://www.ilga.gov/commission/jcar/admincode/008/008000900001100R.html>

A) Composter shall not be constructed less than 200 feet from a stream, private potable water supply well, **or any other potable water supply source**, except in accordance with Section 14.2(b) of the Illinois Environmental Protection Act.

B) Composter shall not be constructed within the applicable 200 or 400 foot minimum setback zone of an existing community water supply well as established pursuant to Section 14.2 of the Illinois Environmental Protection Act.”

The Illinois DADA also includes minimum design specifications for dead swine composters including bin type, sizing, number of mortalities, and loading rate as follows:⁸

“4) For bin composting, the composter shall consist of primary and secondary bins. The size of the composter shall be based on the facility's projected mortality rate of swine during any 3-month period. The primary and secondary bins shall each contain a minimum of 10 square feet of composting area for each 1000 pounds of carcass to be composted.

5) For bin composting, the composter shall be constructed of permanent rot-resistant wall materials, such as preservative-treated wood, concrete, or precast concrete such as highway lane dividers. Each composter bin shall be three sides of a rectangle or square. One side of the bin shall be left open for loading, unloading and mixing the compost. In emergency situations, hay bales of 48" or greater in diameter may be used on a temporary basis in the above configuration of side walls.”

Our concern is that the USEPA may have made this particular recommendation based on information that was not available to the public or the IDOA. If the compost design is not included in the approved engineering drawings, then the IDOA could not have approved the design of the composter – it is that simple.

We also want to be sure that if a mortality compost design was provided by the FSA or the applicant to the USEPA, that the public is provided a copy of that information so that we can perform our own review for efficacy and adherence to state laws, regulations, and guidance documents.

Did the USEPA determine whether the mortality compost design met the minimum requirements of both the Illinois LMFA regulations and the Illinois specific NRCS engineering requirements?

⁸ See: <https://www.ilga.gov/commission/jcar/admincode/008/008000900001100R.html>

For example, in addition to the regulatory minimum requirements, there is guidance in the “Illinois additions” to the NRCS National Engineering Handbook as follows:⁹

“Compute the minimum available capacity of the primary composting bins by multiplying the design daily mortality rate (pounds of dead animals per day) by a volume factor. In general, the designer should use a volume factor of 20 cubic feet per pound of dead animals per day for larger animals, such as swine and cattle. This will yield enough space for 90 days of mortalities in a well-managed composting system with an appropriate carbon to nitrogen ratio (C:N ratio).”

The Illinois Environmental Protection Act (Section 14.2) provides clarification on setbacks and waivers associated with pollution sources near potable water supply wells **[emphasis added]**:¹⁰

Sec. 14.2. New potential source or route; minimum setback zone. A minimum setback zone is established for the location of each new potential source or new potential route as follows:

(a) Except as provided in subsections (b), (c) and (h) of this Section, no new potential route or potential primary source or potential secondary source may be placed **within 200 feet of any existing or permitted community water supply well or other potable water supply well.**

(b) The owner of a new potential primary source or a potential secondary source or a potential route may secure a waiver from the requirement of subsection (a) of this Section for a potable water supply well other than a community water supply well. A written request for a waiver shall be made to the owner of the water well and the Agency. Such request shall identify the new or proposed potential source or potential route, shall generally describe the possible effect of such potential source or potential route upon the water well and any applicable technology-based controls which will be utilized to minimize the potential for contamination, and shall state whether, and under what conditions, the requestor will provide an alternative potable water supply. Waiver may be granted by the owner of the water well no less than 90 days after receipt of the request unless prior to such time the Agency notifies the well owner that it does not concur with the request.

This paragraph allows a smaller setback for private water wells **[emphasis added]**:

No waiver under this Section is required where the potable water supply well is part of a private water system as defined in the Illinois Groundwater Protection Act, **and the owner of such well will also be the owner of a new potential**

⁹ See:

https://www.nrcs.usda.gov/wps/cmیس_proxy/https/ecm.nrcs.usda.gov%3A443/fncmis/resources/WEBP/ContentStream/idd_2013EB6E-0000-CC50-9954-882ADB95846B/0/IL651.1007_Mortality_Composting_Dec2019.pdf

¹⁰ See: <https://www.ilga.gov/legislation/ilcs/ilcs5.asp?ActID=1585&ChapterID=36>

secondary source or a potential route. In such instances, **a prohibition of 75 feet** shall apply and the owner shall notify the Agency of the intended action so that the Agency may provide information regarding the potential hazards associated with location of a potential secondary source or potential route in close proximity to a potable water supply well.

Our concern here is that the pollution source (mortality composter) could be located within 75 feet of the Fanter Farms private water well rather than 200 feet (comparing paragraphs (a) and (b) bolded text).

The overarching concern is that the entire area has shallow groundwater that is directly tied to the shallow portion of the Mahomet. Any contamination from the production site and the land application site(s) can infiltrate and thus contaminate the only water supply available to the nearby community of Peterville and any other residence within the vicinity of the hog facility and land application sites.

7. Best Management Practice (BMP) Notification to Manure Handlers – Page 3 of 5 (EA page 120 of 279), Ms. Bosscher wrote:

“The applicant should inform any other parties (including contractors and land owners) who accept, handle, or transport the manure from the facility that the area is underlain by sensitive groundwater (the Mahomet SSA).”

Public Comment: It is unclear what the USEPA wants the applicant to say to other parties that would be protective of the Sole Source Aquifer. If the applicant that generates the millions of gallons of untreated swine manure wastewater gives that waste to a third party – then the control of that waste is no longer dictated by a state permit through IDOA/IEPA. There are no specific requirements for land application in this USEPA recommendation – not even a reference to a nutrient management plan or similar documentation on how the third party disposes/utilizes the manure wastewater.

8. Best Management Practice (BMP) Land Application during rainfall or snow-covered conditions – Page 3 of 5 (EA page 120 of 279), Ms. Bosscher wrote

“The applicant should not land apply (including by injection and incorporation methods) manure during rainfall (35 IAC 560.207) or when the ground is saturated, frozen, or snow-covered (35 IAC 560.206) at any site above the Mahomet SSA.”

Public Comment: There are two rules cited in this recommendation. The first refers to state regulations restricting land application of manure related to rainfall¹¹ and the second refers to snowfall:¹²

¹¹ See: <https://www.ilga.gov/commission/jcar/admincode/035/035005600B02070R.html>

¹² See: <https://www.ilga.gov/commission/jcar/admincode/035/035005600B02060R.html>

“Section 560.207 Rainfall - Livestock waste should not be applied during a rainfall or to a saturated soil. Application should not be made by spraying immediately after a rainfall event. Judgment should be used in planning waste applications in conjunction with weather patterns. “

“Section 560.206 Frozen or Snow-Covered Ground - Waste application on frozen or snow-covered land should be avoided. If wastes are spread on frozen or snow-covered land, such application should be limited to land areas on which:

- a) Land slopes are 5 percent or less, or
- b) Adequate erosion control practices exist. “

Both these regulations use the word “should” and allow the activity under certain circumstances. There is no strict prohibition of land application – meaning the state chose the words “should not” instead of “shall not.”

The USEPA’s recommendation adds the words “including by injection and incorporation methods” which is not in the state regulations. Did the applicant provide the proposed operation’s Nutrient Management Plan to FSA/USEPA? Did the USEPA consider the volume of liquid swine manure wastewater that would be generated by Fanter Farms? Did the applicant claim they would use injection or incorporation methods?

Did the applicant provide to the FSA/USEPA any soils information, field maps, crop yields, and projected land application rates that would adequately describe how millions of gallons of liquid swine manure would be land applied over the Mahomet Sole Source Aquifer? Without such information, how could FSA/USEPA make a qualified analysis?

Unfortunately, in Illinois the operator of a livestock facility with less than 1,000 animal units is not required to ‘prepare and maintain’ a waste management plan. In fact, Illinois does not require the submittal and approval of a waste management plan until the livestock facility has significantly high animal units (5,000 au). Perhaps USEPA was not familiar with how vastly different Illinois regulates animal waste as compared to other states in the Region V and throughout the country.

LMFA (510 ILCS 77/20) includes three size categories based on animal units and assigns the waste management plan requirements as follows **[emphasis added]**:

(510 ILCS 77/20) Sec. 20. Handling, storing and disposing of livestock waste.

(a) The livestock management facility owner or operator shall comply with the requirements for handling, storing, and disposing of livestock wastes as set forth in the rules adopted pursuant to the Illinois Environmental Protection Act concerning agriculture related pollution.

(b) The livestock management facility owner or operator at a facility of less than

1,000 animal units **shall not be required** to prepare and maintain a waste management plan.

(c) The livestock management facility owner or operator at a facility of 1,000 or greater animal units but less than 5,000 animal units shall prepare and maintain on file at the livestock management facility a general waste management plan. Notwithstanding this requirement, a livestock management facility subject to this subsection may be operated on an interim basis but not to exceed 6 months after the effective date of the rules promulgated pursuant to this Act to allow for the owner or operator of the facility to develop a waste management plan. The waste management plan shall be available for inspection during normal business hours by Department personnel.

(d) The livestock management **facility owner or operator at a facility of 5,000 or greater animal units shall prepare, maintain, and submit to the Department the waste management plan for approval.** Approval of the waste management plan shall be predicated on compliance with provisions of subsection (f). The waste management plan shall be approved by the Department before operation of the facility or in the case of an existing facility, the waste management plan shall be submitted within 60 working days after the effective date of the rules promulgated pursuant to this Act.

In fact, Illinois does not require the submittal of a waste management plan to the IDOA until the animal units are greater than 5,000, which in this case would be 12,500 hogs. Illinois has abnormally large animal unit triggers for submittal as compared to other hog producing states in the country. This regulatory abnormality prevents the public and potentially impacted neighbors and landowners from knowing where the millions of gallons of liquid swine manure will be land applied during the life of the operation.

So, the question remains, did the applicant inform the FSA/USEPA as to where the millions of gallons of liquid swine manure wastewater will be land applied in Mason County and if known, are those lands overlying the Mahomet Aquifer? We ask that you share this information with the public and surrounding community so that we can best understand your confidence that this hog facility will not cause harm to the Mahomet.

9. Best Management Practice (BMP) Timing of Land Application – Page 3 of 5 (EA page 120 of 279), Ms. Bosscher wrote:

“The applicant should land apply manure as close to planting time as possible, i.e., in the spring or, if a cover crop will be planted, in early fall - when a crop that will use the nutrients is planted. Based on the storage capacity described in the facility's application (12 months), this should be achievable. Planting of fall/winter cover crops should be encouraged. 5”

Public Comment: The USEPA citation (5) is elaborated in the footnotes of the letter [emphasis added]:¹³

“According to the 2019 Illinois Nutrient Loss Reduction Strategy report, cover cropping can be one of the most effective in-field strategies for reducing both nitrate-nitrogen and total phosphorus loss, **including reducing downward leaching.**”

The words “leaching” is found only twice in the 179 page 2019 Biennial Report and both times it is used in a section of the report called *Fall Covers for Spring Savings* (formerly the Crop Insurance Reward Program) as part of a laundry list of potential outcomes from that program.

The two paragraphs do not mention liquid swine manure or any manure land application:

“This project was previously called Crop Insurance Reward Program for Cover Crops. Cover crops are increasingly used as a conservation and crop production practice to reduce nutrient leaching, soil loss, and runoff, while also improving soil health. The strategy shows that cover cropping can be one of the most effective in-field strategies for reducing both nitrate-nitrogen and total phosphorus loss from corn and soybean fields.

Crop insurance is an integral part of the farm safety net that provides protection for farmers when adverse weather affects crop yields. Cover crops can improve the resiliency of Illinois farm operations by improving the soil’s ability to absorb and hold water. Cover crops help prevent erosion and can reduce leaching of nitrate-nitrogen through tile water. Because more resilient soil results in less yield variation from year to year, another benefit may be fewer insurance claims over time.”

The 2019 Biennial Report does contain several appendices – here is the complete set of hyperlinks as found on the Illinois EPA website:¹⁴

- [Full 2019 Biennial Report](#)
- [Biennial Report Summary](#)
- [News Release](#)
- Biennial Report Appendices
 - [Appendix A: Recommendations for Improving Future Nutrient Loss Assessments](#)
 - Appendix B: Partner Spreadsheets
 - [Agriculture](#)
 - [Point Source](#)
 - [Urban Stormwater](#)
 - [Appendix C: NRCS At A Glance 2017-2018](#)

¹³ See: <https://www2.illinois.gov/epa/topics/water-quality/watershed-management/excess-nutrients/Documents/NLRS-Biennial-Report-2019-Final.pdf>

¹⁴ See: <https://www2.illinois.gov/epa/topics/water-quality/watershed-management/excess-nutrients/Pages/nutrient-loss-reduction-strategy.aspx>

- [Appendix D: NARP Agreement](#)
- Citation: IEPA, IDOA, and University of Illinois Extension 2019. Illinois Nutrient Loss Reduction Strategy Biennial Report 2017-2018. Illinois Environmental Protection Agency and Illinois Department of Agriculture; Springfield, Illinois. University of Illinois Extension; Urbana, Illinois.
<https://www2.illinois.gov/epa/topics/water-quality/watershed-management/excess-nutrients/Documents/NLRS-Biennial-Report-2019-Final.pdf>.

We reviewed the Biennial Report and the Appendices and found all to be lacking in anything that could be remotely interpreted as proof that cover crops is sufficient to protect a Sole Source Aquifer from the land application of millions of gallons of untreated liquid swine manure wastewater.

Appendix B – Agriculture contains 491 pages and a word search for ‘manure’ yielded references to a half-dozen presentations, podcasts, and social media outreach.

Appendix B – Point Source contains 114 pages and a word search for ‘manure’ yielded zero results

Appendix A – Recommendations for Future Nutrient Loss Assessments is a two page summary by Gregory McIsaac discussing problems with HUC8 watershed assessments as follows:

“Improved estimation of nitrate and TP losses at the HUC8 scale seems to be hampered by 1) relatively low frequency of concentration observations, especially for phosphorus at high flows, 2) lack of concentration and/or flow data for some HUC8s, 3) mismatches between HUC8 areas and monitored drainage areas for some HUC8s, and 4) mismatches between the locations of USGS flow monitoring and Illinois EPA concentration sampling for a few HUC8s. A potential response to the second and third issue would be to expand concentration and flow data collection at more locations closer to HUC8 outlets. While such an expansion would provide a more complete picture of nutrient losses at the HUC8 scale in the future, the lack of historical data at new monitoring locations would not allow the assessment of changes since the baseline period.

An additional strategy for improving and spatially expanding nutrient loss estimates would be to make greater use of geographic information systems to identify and quantify relationships between nutrient loads in monitored drainage areas to land use, soils, and other watershed characteristics; then use these relationships to estimate nutrient loads from unmonitored areas. Watershed models such as SWAT and SPARROW may be useful in this regard. Accurate implementation of this approach will require some improvements in the accuracy of point source discharges and outfall locations.”

Basically, the 2019 Biennial Report is a financial report and thus is an extremely poor choice to bolster any technical or scientific argument about proper ways to land apply liquid swine manure wastewater that could be relied upon to protect the Mahomet Sole Source Aquifer.

Did the USEPA not have a better and more pertinent set of reference materials to bolster their argument that land applying millions of gallons of liquid swine manure wastewater year after year on top of the shallowest portion of the Mahomet Aquifer would be a good idea?

The interesting part of this recommendation is that liquid swine manure wastewater stored in deep pits is not dilute like wastewater stored in an outdoor lagoon. The main reason for this significant difference is that the facility will not use flush water to move the waste like a typical shallow pit hog barn to a storage lagoon and the deep pits cannot receive any dilution from precipitation. That means the nutrient and organic loading of deep pit wastewater is significantly more concentrated than traditional manure lagoon wastewater.

Did the applicant provide an expected concentration of nutrients and salts of liquid swine manure wastewater? Does the USEPA know how the increased concentrations of nutrients, salts, and organics impact fragile seedlings in the field?

10. Best Management Practice (BMP) Enhance Plant Uptake – Page 3 of 5 (EA page 120 of 279), Ms. Bosscher wrote:

“When conditions allow (i.e., not saturated, frozen, or snow-covered AND when a crop will be present), land application of manure should target the root zone and enhance plant uptake and reduce losses (e.g., run-off, vapors, and leaching to groundwater). 6 The owner/ operator or designee should consider using slower application speeds, split applications, and injection equipment which have been reported to reduce nutrient leaching to below the root zone. 7,8”

Public Comment: Did the USEPA receive a copy of the soil boring log that describes subsurface materials at the Fanter Farms site (See Figure 1)? The soil boring log shows that there is basically sand from the surface to 13 feet below grade. This is the only subsurface information provided in the NOITC submitted to IDOA by the applicant. As far as we know, no information was provided to IDOA about the subsurface materials underlying lands that may be used for the land application of liquid swine manure wastewater.

The facility location is approximately NE1/4 NW1/4 Sec 3 T20N R8W Mason County IL as taken from the NOITC forms and documentation submitted to IDOA. Did the USEPA investigate the soils near the facility prior to making this recommendation?

We created a custom soil survey using the NRCS Web Soil Survey program using the Township and Range coordinates from the Fanter Farms NOITC.¹⁵ (See Figures 2 through 4 below) The soils at the production site are identified as 54B – Plainfield sand 1 to 7 percent slope.



Figure 2 – Location of Fanter Farms and soil boring location (from NOITC).

The fields directly adjacent to the production site (east) have soil types including the 54B (Plainfield sand) as well as 200A (Orio loam) and 131A (Alvin fine sandy loam). The soil profiles for each are described by NRCS as follows:

54B - Plainfield sand: Typical profile

- A - 0 to 8 inches: sand*
- B - 8 to 32 inches: sand*
- C - 32 to 60 inches: sand*

200A – Orio loam: Typical profile

- A - 0 to 9 inches: loam*
- E - 9 to 18 inches: fine sandy loam*
- Btg - 18 to 35 inches: clay loam*
- Bg - 35 to 41 inches: fine sandy loam*
- Cg - 41 to 60 inches: sand*

131A – Alvin fine sandy loam: Typical profile

- H1 - 0 to 5 inches: fine sandy loam*
- H2 - 5 to 18 inches: fine sandy loam*
- H3 - 18 to 45 inches: fine sandy loam*
- H4 - 45 to 80 inches: loamy fine sand*

¹⁵ See: <https://websoilsurvey.nrcs.usda.gov/app/>

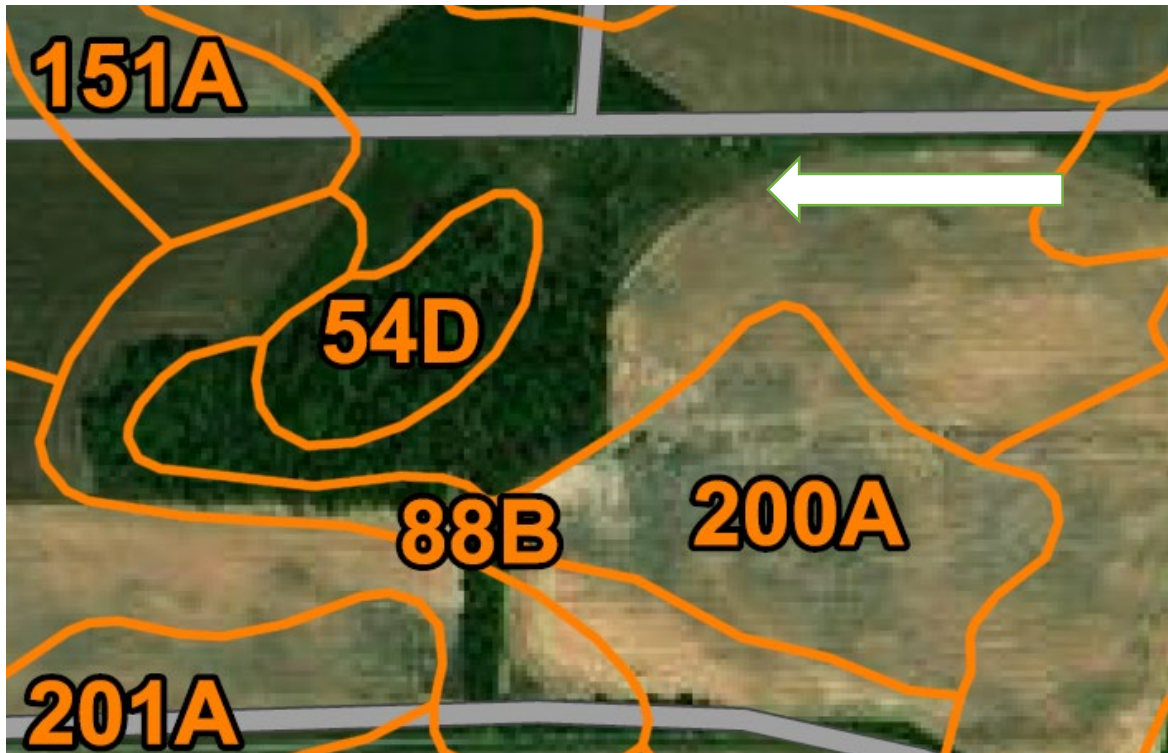


Figure 3 – Closeup of soils at the production site (see arrow) Soil Type 54B

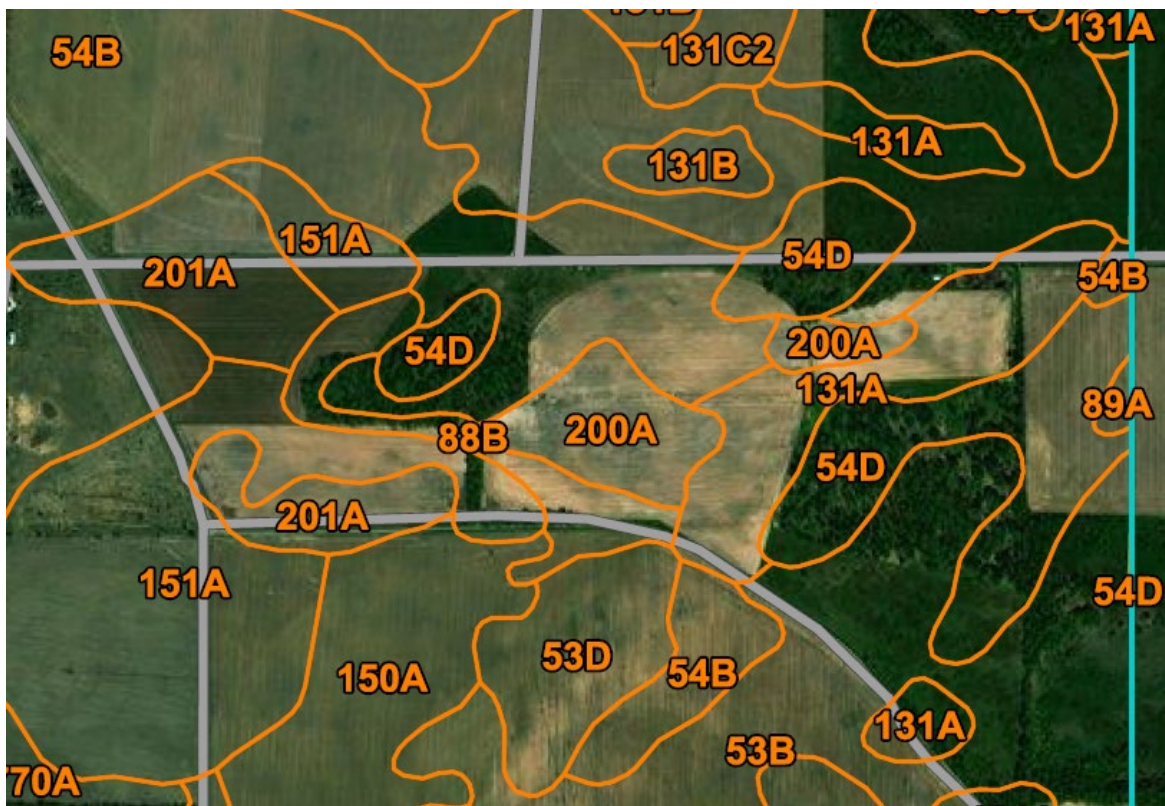


Figure 4 – Snapshot of soil survey surrounding the Fanter Farm proposed location.

Basically, the north half of the crop circle is sand, and the south half is loam and sand.

The USEPA cited two resources (footnotes 7 and 8) as foundation for the ‘enhanced plant uptake’ recommendation.

(7) University of Minnesota – Extension website¹⁶

(8) University of Wisconsin – Madison website¹⁷

Although these references do have good illustrations of various land application methods, it is unclear what parts of the documents/webpages the USEPA is relying upon to convey proper methods for enhanced plant uptake. These references do not focus on protection of Sole Source Aquifers or even land application on sandy soils.

11. Best Management Practice (BMP) Comprehensive Nutrient Management Plan (NMP) – Page 3 of 5 (EA page 120 of 279), Ms. Bosscher wrote:

“A comprehensive Nutrient Management Plan (NMP) should be maintained and implemented (e.g., soil characteristics 9, manure and soil nutrient testing, crop rotations, and manure application records) 10 for each land application site above the Mahomet SSA. We understand that the State of Illinois does not require NMP for operations with less than 1000 animal units, but voluntarily complying with requirements for large operations (e.g., 8 IAC 900 Subpart 1-1) is strongly recommended to protect the sensitive groundwater in this area. We understand the applicant, with assistance from experienced professionals, intends to develop their nutrient management plan during the first year following construction.”

Public Comment: The last sentence of this recommendation indicates the USEPA was informed by either the applicant, the FSA, or both that a voluntary nutrient management plan would be developed after the facility is constructed. That means the USEPA has no idea what the nutrient management plan would include nor whether the plan would reliably provide additional protections to the shallow Sole Source Aquifer. At the time of USEPA’s recommendation this nutrient management plan is an imaginary document.

This recommendation includes several resources in the footnotes that did not have URLs so that we would know exactly which document is being referenced:

“9 See, for example, Chapter 4 of the NRCS Agricultural Waste Management Field Handbook

¹⁶ See: <https://extension.umn.edu/manure-management/manure-application-methods-and-nitrogen-losses>

¹⁷ See: <https://uwdiscoveryfarms.org/wp-content/uploads/sites/1255/2020/07/Managing-Tile-Drained-Landscapes.pdf>

10 See also NRCS Conservation Practice Standard Code 590, Nutrient Management, and associated resources.

Chapter 4 of the NRCS Animal Waste Management Field Handbook is titled Agricultural Waste Characteristics. A word search (and my personal knowledge from years of reading the entire handbook) NRCS AWMFH Chapter 4 reveals that the chapter does not have any discussion on soil characteristics that would relate to the USEPA's recommendation.

Chapter 4 - Agricultural Waste Characteristics

- 651.0400 Introduction
- 651.0401 Definitions of waste characterization terms
- 651.0402 Units of measure
- 651.0403 Animal waste characteristics
- 651.0404 Manure as transferred to utilization
- 651.0405 Other wastes
- 651.0406 References

Tables
Figures

Perhaps the USEPA meant to cite Chapter 5 The Role of Soils in Waste Management?

Chapter 5 – Role of Soils in Waste Management

- 651.0500 Introduction
- 651.0501 Soil phases
- 651.0502 Soil-agricultural waste interaction
- 651.0503 Soil-agricultural waste mineralization relationship
- 651.0504 Soil characteristics
- 651.0505 References

Tables
Figures

The USEPA also referenced NRCS Standard 590 (Nutrient Management) but did not specify if the state-specific Standard 590 was what was meant or the generic national version. The State of Illinois does have their own NRCS Standard 590, which can be found by going to the NRCS Field Office Technical Guide (FOTG) website (choose Illinois from the drop down menu, then Section IV Practice Standards, then scroll down to Nutrient Management).¹⁸

The USEPA provided no additional restrictions on the development of the NMP other than a generic list of contents that would indicate that the NMP developed voluntarily by the applicant outside of any public review would be protective of the shallow Mahomet Aquifer. For all intents and purposes, following Standard 590 is not sufficient to prove

¹⁸ See: <https://efotg.sc.egov.usda.gov/api/CPSFile/5754/>

that the disposal of millions of gallons of liquid swine manure wastewater will not pollute the shallow Mahomet Sole Source Aquifer that is unconfined and overlain by sand.

12. Best Management Practice (BMP) Nitrogen Leaching Assessment – Page 3 of 5 (EA page 120 of 279), Ms. Bosscher wrote:

“Application rates should be limited based on the results of nitrogen leaching risk assessment(s) 11, in addition to the requirements in 8 IAC 900.801 and 510 ILCS 77/20. A nitrogen leaching assessment should be completed for each land application field over the Mahomet SSA to determine the amount of nitrogen that the soil can handle at different times of the year to ensure protection of the SSA. Other sources that contribute nitrogen and phosphorus to the soil (e.g., crop rotation, other fertilizers) should be considered, and realistic yield goals should be used.”

Public Comment: This recommendation adds the concept of nitrogen leaching risk assessment and cites NRCS Part 302 - Nutrient Management Policy Implementation.¹⁹ We looked up the cited document and found it is a four page outline/guidelines on state implementation of changes to the NRCS Standard 590:

“302.0 Purpose

A. In December 2011, the Natural Resources Conservation Service (NRCS) adopted a new policy for providing nutrient management-related technical assistance. The policy is contained in Title 190, General Manual (GM), Part 402, Nutrient Management. The National Conservation Practice Standard (CPS) Code 590, Nutrient Management which provides standards and specifications for the nutrient management and nutrient risk assessment processes was also revised.

B. The information in this instruction is provided to assist States in implementing 190 GM Part 402, CPS Code 590, and NRCS-approved nitrogen and phosphorus risk assessments.

C. With the exception of NRCS seeding and planting type conservation practices requiring nutrient applications for plant establishment, the amount, source, placement, and timing of plant nutrients (fertilizer and manure) to agricultural landscapes, is covered by the CPS Code 590. CPS Code 633, Waste Recycling, covers the use of agricultural or nonagricultural byproducts for energy and conservation benefits (non-nutrient).

D. States must comply with erosion, nitrogen, and phosphorus risk-assessment criteria by January 1, 2013.”

¹⁹ See: <https://www.crops.org/files/science-policy/testimony/590-part302.pdf>

And this section on Nitrogen Risk Assessment:

B. Nitrogen Risk Assessment Criteria.

(1) Leaching Index.—The current NRCS-approved tool to assess the nitrogen leaching potential is the Leaching Index (LI). If States have not already developed tables for the use of the LI, the Revised Universal Soil Loss Equation (RUSLE) 2 calculates LI values for the selected soil and climate. Interpretations of the LI values can be found in the chapter, “*Water Percolation: An Indicator of Nitrogen-Leaching Potential*”. (Williams, J.R., and D.E. Kissell, 1991. *Water Percolation: An Indicator of Nitrogen-Leaching Potential*. In Follett, Keeney and Cruse (eds). *Managing Nitrogen for Groundwater Quality and Farm Profitability*. SSSA, Madison, WI, pp 80-81.)

(i) At the State and county levels, NRCS must run sufficient field scenarios to establish geographic regions and map units within the State where nitrogen (N) leaching is not a potential risk to water quality. With the concurrence of the State water quality control authorities, no nitrogen leaching assessment is required in these scenarios.

(ii) When N leaching is a resource concern, planners must use the NRCS-approved nutrient risk assessment for N on all sites.

(2) Nutrient Tracking Tool (NTT).The NTT is currently under development for use by NRCS to assess the risk of nitrogen and phosphorus loss through surface runoff and leaching. When directed, States will adopt the NTT to replace the LI.

We are assuming the gist of this citation is to make sure the applicant utilizes the Nutrient Tracking Tool (NTT) as mentioned in this 2012 NRCS outline/guideline. We googled Nutrient Tracking Tool and found the website where you can access the free software.²⁰ It is not clear how the USEPA wants the applicant to use the software to determine application rates of liquid swine manure to lands overlying a Sole Source Aquifer. Is the USEPA claiming that the NTT software considers Sole Source Aquifers?

In this recommendation, the USEPA cites 8 IAC 900.801 and 510 ILCS 77/20, which read as follows:²¹

“Section 900.801 Purpose

Livestock waste management plans shall be prepared by livestock management facility owners or operators to provide for adequate land area for the proper application of livestock waste *at rates not to exceed the agronomic nitrogen demand of the crops to be grown when averaged over a 5-year period* or at the phosphorus rate, depending on soil test results. [510 ILCS 77/20(f)(4)] “

²⁰ See: <https://ntt.tiaer.tarleton.edu/welcomes/new?locale=en>

²¹ See: <https://www.ilga.gov/commission/jcar/admincode/008/008009000H08010R.html>

And citation 510 ILCS 77/20 from the Illinois LMFA here:²²

(510 ILCS 77/20)

Sec. 20. Handling, storing and disposing of livestock waste.

(a) The livestock management facility owner or operator shall comply with the requirements for handling, storing, and disposing of livestock wastes as set forth in the rules adopted pursuant to the Illinois Environmental Protection Act concerning agriculture related pollution.

(b) The livestock management facility owner or operator at a facility of less than 1,000 animal units shall not be required to prepare and maintain a waste management plan.

(c) The livestock management facility owner or operator at a facility of 1,000 or greater animal units but less than 5,000 animal units shall prepare and maintain on file at the livestock management facility a general waste management plan. Notwithstanding this requirement, a livestock management facility subject to this subsection may be operated on an interim basis but not to exceed 6 months after the effective date of the rules promulgated pursuant to this Act to allow for the owner or operator of the facility to develop a waste management plan. The waste management plan shall be available for inspection during normal business hours by Department personnel.

(d) The livestock management facility owner or operator at a facility of 5,000 or greater animal units shall prepare, maintain, and submit to the Department the waste management plan for approval. Approval of the waste management plan shall be predicated on compliance with provisions of subsection (f). The waste management plan shall be approved by the Department before operation of the facility or in the case of an existing facility, the waste management plan shall be submitted within 60 working days after the effective date of the rules promulgated pursuant to this Act.

The owner or operator of an existing livestock management facility that through growth meets or exceeds 5,000 animal units shall file its waste management plan with the Department within 60 working days after reaching the stated animal units.

The owner or operator of a livestock management facility that is subject to this subsection (d) shall file within 60 working days with the Department a revised waste management plan when there is a change as provided in subsection (e) of this Section that will materially affect compliance with the waste management plan.

(d-5) The owner or operator of multiple livestock management facilities under common facility ownership where the cumulative animal units of the facilities are equal to or greater than the animal unit numbers provided for in subsection (c) of this Section shall prepare and keep on file at each facility a waste management plan in

²² See: <https://www.ilga.gov/legislation/ilcs/fulltext.asp?DocName=051000770K20>

accordance with the requirements of subsection (c). The owner or operator of multiple livestock management facilities that are under common facility ownership where the cumulative animal units of the facilities are equal to or greater than the animal unit numbers provided for in subsection (d) of this Section shall prepare and file with the Department a waste management plan in accordance with the provisions of subsection (d). Cumulative animal units shall be determined by combining the animal units of multiple livestock management facilities under the common facility ownership based upon the design capacity of each facility. For the purposes of this subsection (d-5), "under common facility ownership" means the same person or persons own, directly or indirectly, through majority owned business entities at least 51% of any person or persons (as defined by Section 10.55) that own or operate the livestock management facility or livestock waste handling facility located in the State of Illinois.

(e) The owner or operator of a livestock management facility shall update the waste management plan when there is a change in values shown in the plan under item (1) of subsection (f) of this Section. The waste management plan and records of livestock waste disposal shall be kept on file for three years.

(f) The application of livestock waste to the land is an acceptable, recommended, and established practice in Illinois. However, when livestock waste is not applied in a responsible manner, it may create pollutional problems. It should be recognized that research relative to livestock waste application based on livestock waste nutrient content is currently ongoing. The Dean of the College of Agricultural, Consumer and Environmental Sciences at the University of Illinois, or his or her designee, shall annually report to the Advisory Committee on the status of phosphorus research, including research that has been supported in whole or in part by the Illinois Council on Food and Agricultural Research. The Advisory Committee may also consult with other appropriate research entities on the status of phosphorus research. It is considered acceptable to prepare and implement a waste management plan based on a nitrogen rate, unless otherwise restricted by this Section. The waste management plan shall include the following:

(1) An estimate of the volume of livestock waste to be disposed of annually, which shall be obtained by multiplying the design capacity of the facility by the appropriate amount of waste generated by the animals. The values showing the amount of waste generated in Table 2-1, Midwest Plan Service's, MWPS-18, Livestock Waste Management Facilities Handbook or Design Criteria for the field application of livestock waste adopted by the Agency may be used.

(2) The number of acres available for disposal of the

waste, whether they are owned by the owner or operator of the livestock waste management facility or are shown to be contracted with another person or persons for disposal of waste.

(3) An estimate of the nutrient value of the waste.

The owner or operator may prepare a plan based on an average of the minimum and maximum numbers in the table values derived from Midwest Plan Service's, MWPS-18, Livestock Waste Facilities Handbook, the Agency's Agriculture Related Pollution regulations, or the results of analysis performed on samples of waste. For the purposes of compliance with this subsection, the nutrient values of livestock waste may vary as indicated in the source table. In the case of laboratory analytical results, the nutrient values may vary with the accuracy of the analytical method.

(3.5) Results of the Bray P1 or Mehlich test for soil phosphorus reported in pounds of elemental phosphorus per acre. Soil samples shall be obtained and analyzed from the livestock waste application fields on land owned or under the control of the owner or operator where applications are planned. Fields where livestock waste is applied shall be sampled every 3 years. Sampling procedures, such as the number of samples and the depth of sampling, as outlined in the current edition of the Illinois Agronomy Handbook shall be followed when soil samples are obtained.

(3.6) If the average Bray P1 or Mehlich test result for soil phosphorus calculated from samples obtained from the application field is 300 pounds or less of elemental phosphorus per acre, livestock waste may continue to be applied to that field in accordance with subsection (f) of this Section. If the average Bray P1 or Mehlich test result for soil phosphorus for an application field is greater than 300 pounds of elemental phosphorus per acre, the owner or operator shall apply livestock waste at the phosphorus rate to the field until the average Bray P1 or Mehlich test for soil phosphorus indicates there is less than 300 pounds of elemental phosphorus per acre. Upon the development of a phosphorus index that is approved subject to the provisions established in Section 55 of this Act, the owner or operator shall use such index in lieu of the 300 pounds of elemental phosphorus per acre.

(4) An indication that the livestock waste will be applied at rates not to exceed the agronomic nitrogen demand of the crops to be grown when averaged over a 5-year period.

(5) A provision that livestock waste applied within 1/4 mile of any residence not part of the facility shall be injected or incorporated on the day of application. However, livestock management facilities and livestock waste handling facilities that have irrigation systems in operation prior to the effective date of this Act or existing facilities applying waste on frozen ground are not subject to the provisions of this item (5).

(6) A provision that livestock waste may not be applied within 200 feet of surface water unless the water is upgrade or there is adequate diking, and waste will not be applied within 150 feet of potable water supply wells.

(7) A provision that livestock waste may not be applied in a 10-year flood plain unless the injection or incorporation method of application is used.

(8) A provision that livestock waste may not be applied in waterways.

(9) A provision that if waste is spread on frozen or snow-covered land, the application will be limited to land areas on which:

(A) land slopes are 5% or less, or

(B) adequate erosion control practices exist.

(10) Methods for disposal of animal waste.

(g) Any person who is required to prepare and maintain a waste management plan and who fails to do so shall be issued a warning letter by the Department for the first violation and shall be given 30 working days to prepare a waste management plan. For failure to prepare and maintain a waste management plan, the person shall be fined an administrative penalty of up to \$1,000 by the Department and shall be required to enter into an agreement of compliance to prepare and maintain a waste management plan within 30 working days. For failure to prepare and maintain a waste management plan after the second 30 day period or for failure to enter into a compliance agreement, the Department may issue an operational cease and desist order until compliance is attained.

(Source: P.A. 91-110, eff. 7-13-99; 92-16, eff. 6-28-01.)

The question is – does the USEPA believe that the LMFA was written to provide *additional* restrictions on land application of liquid swine manure wastewater such that the shallow unconfined Mahomet Aquifer would be protected? Perhaps the USEPA could be more specific in its citations and maybe even quote the sections that are the foundation and basis of their recommendations.

13. Best Management Practice (BMP) tiled and irrigated fields – Page 4 of 5 (EA page 120 of 279), Ms. Bosscher wrote:

“For any tiled fields, the applicant should apply manure only when the soil is relatively dry. Managing drainage water by raising drain outlets before manure application is also recommended to reduce transport of contaminants.

For irrigated fields, good water management is needed to prevent excessive leaching of soluble nutrients such as nitrate, and any additional irrigation to leach salts from soils should be timed to minimize the leaching of nitrates. 12”

Public comment: These two recommendations generate more questions, such as what soil moisture percentage would be considered ‘relatively dry’ for sandy soils? What is good water management? Why only prevent excessive leaching? Wouldn’t precipitation drive the pollutants into the shallow groundwater regardless of irrigation methods?

The reference cited by USEPA in footnote 12 is Chapter 11 of the NRCS Agricultural Waste Management Field Handbook.²³

Chapter 11 Waste Utilization

- 651.1100 Introduction
- 651.1101 Waste consistency
- 651.1102 Land application
- 651.1103 Salinity
- 651.1104 Plant nutrients
- 651.1105 Nutrient management
- 651.1106 References
- Tables
- Figures

Chapter 11 is 47 pages long and contains a lot of information that may not be applicable to what the USEPA wants to recommend. It would be helpful to have direct quotes or at least page numbers within the chapter to make these recommendations more useful.

On page 11-15 of Chapter 11, the NRCS states:

“Liquid manure must be applied at a rate that is compatible with the infiltration characteristics of the soil. For example, if a soil has a slow rate of intake, apply liquid manure at a slow rate. Total quantities of nutrients must not exceed the amount that can be used by the crop being grown or that can be safely stored in the root zone for carryover to the next crop. Rates and quantities must be carefully controlled on sites that have a high water table.”

And this paragraph addressing fall manure application and cover crops:

“It is a common practice to apply manure in the fall after crop harvest. Among the benefits of fall applications are that it completes the application process before the busy spring planting season, it allows application when the fields are dry and not subject to severe compaction, and it empties the manure storage facilities before the winter season to allow for maximum storage over the winter months when manure application is more problematic due to snow covered ground and frozen soil. The problems with fall application are that it can leave the manure on the soil surface, which makes it subject to erosion during the winter months, and

²³ See: <https://directives.sc.egov.usda.gov/34422.wba>

the nitrogen can be lost through volatilization and leaching. When a winter cover crop follows fall manure applications, the erosion is diminished and much of the nitrogen is captured in the soil profile due to the soil ecosystem that forms in presence of a live root. In addition, the winter cover crop will add much more organic matter to the soil than the manure can provide alone.”

There are good practices in the NRCS AWMFH, but none of the practices are focused on *additional* precautions when land applying liquid manure over a shallow Sole Source Aquifer.

14. Best Management Practice (BMP) groundwater monitoring – Page 4 of 5 (EA page 120 of 279), Ms. Bosscher wrote:

“Periodic groundwater monitoring is recommended (such as at the on-site irrigation well as described below), so that the owner(s) and operator(s) can implement corrective actions if any impacts, such as increasing contaminants (e.g., nitrates, nitrites, coliform bacteria), are observed in groundwater downgradient of the sites where manure is land applied. 13”

Public Comment: The monitoring of groundwater at the land application sites is an excellent recommendation. However, using the irrigation well as the ‘monitoring well’ is not equivalent to installing monitoring wells at depths that would intercept groundwater pollution as soon as possible. The USEPA did not mention the depth of the irrigation well, but one would presume it is deep enough in the aquifer to produce significant quantities of water. Generally, groundwater monitoring wells are shallow in order to detect pollution in the shallow groundwater.

15. Best Management Practice (BMP) water well protections – Page 4 of 5 (EA page 120 of 279), Ms. Bosscher wrote:

“The adjacent land application site includes an existing irrigation water well. It is important that all wells are properly located, installed, and maintained to prevent the well from becoming a pathway for contamination into the groundwater.

- When a well is no longer needed, it must be properly sealed.
- The applicant should confirm all areas where manure will be produced, handled, or stored are at a lower elevation than the water well location(s), or provide for other means (e.g., raised casing, berms) to prevent contaminated run-off from contaminating the well.
- Periodic sampling of the water well is recommended to evaluate groundwater quality (e.g., nitrates, nitrites, coliform bacteria).”

Public Comment: This recommendation refers to an adjacent land application site. As we have stated several times in these comments, the public has never seen land application maps or other typical contents of a nutrient management plan for the proposed Fanter Farm hog facility. Did the USEPA have access to a set of land

application maps from the applicant and/or the FSA when they made these recommendations? We have made a FOIA request to the USEPA asking for copies of all documents, letters, and emails from the FSA and/or the applicant to the USEPA upon which the USEPA relied upon to make these determinations. In this instance, if the public had access to land application maps, we would (1) know where the millions of gallons of liquid swine manure wastewater would be land applied and (2) do our own research as to the appropriateness of those lands for manure disposal.

16. Best Management Practice (BMP) summary paragraph – Page 4 of 5 (EA page 120 of 279), Ms. Bosscher wrote [**emphasis added**]:

If best management practices, including those listed above, are followed, this project is not likely to contaminate the Mahomet Sole Source Aquifer, designated under the authority of the Safe Drinking Water Act, Section 1424(e), so as to **create a significant hazard to public health**. We request that USDA-FSA, prior to loan approval, ask the farmer applicant to confirm in writing their receipt, understanding, and intention to make good faith efforts to implement the recommendations in this letter. Subsequent implementation could be via incorporation of these best management practices into their nutrient management plan.”

Public Comment: The definition of ‘significant hazard to public health’ is provided in the 40 CFR 149 Sole Source Aquifers as follows:²⁴

“Significant hazard to public health means any level of contaminant which causes or may cause the aquifer to exceed any maximum contaminant level set forth in any promulgated National Primary Drinking Water Standard at any point where the water may be used for drinking purposes or which may otherwise adversely affect the health of persons, or which may require a public water system to install additional treatment to prevent such adverse effect.”

Does this mean that the farmer applicant can pollute the Mahomet Aquifer until the concentration of nitrates exceeds 10 mg/l? If there are no monitoring wells, how would the farmer, the neighbors, the FSA, or the USEPA know that Drinking Water Standards were exceeded? Once they are exceeded – what then? Do the folks that live in Peterville just stop drinking their groundwater?

Who will determine if the shallow groundwater of the Mahomet is contaminated with fecal coliforms due to the land application of millions of gallons of liquid swine manure wastewater over lands that have extremely shallow water supply overlain by sand?

Who is going to inform the neighbors - the pig farmer who polluted the groundwater?

²⁴ See: <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-149/subpart-B/section-149.101>

There are 48 people – mothers, fathers, children, and babies that live in Peterville. They live in 14 homes that all depend on shallow sand point wells for their household water for drinking, cooking, cleaning, and bathing. The groundwater table is so high, they can produce the groundwater with a simple sand point well. There are three elderly adults on oxygen and currently nine children in Peterville. Peterville was platted in 1868 and when measured from the nearest corner of the Fanter Farm hog facility, the half mile radius incurs on that plat. Three Peterville homes are within less than a half mile of the hog facility location.

Information about Peterville was provided to John Gehrke in excruciating detail – including the names and addresses of the nearly 50 people that live there, *yet the FSA never mentioned the word Peterville one time in the EA or the FONSI.*

Not one time.

One of the co-applicant's grandfather, Glenn R. Fanter, owns most of the property east of Peterville, which is upstream according to the natural flow of the aquifer toward the Illinois River. The estate of the other co-applicant's grandfather, the Ronald B. Friend Estate, owns much of the property directly west of Peterville. If these are the lands that will be used to land apply millions of gallons of liquid swine manure wastewater year after year with no oversight by state or federal permit, then every sand point well at every home in Peterville is at risk.

Who is standing up for the people that drink the shallow end of the Mahomet Aquifer?

As displayed by the map of page 17 of the Mahomet Aquifer Protection Task Force Findings, zones of nitrogen pollution surround all then current hog CAFOs in Mason County. Testing also found coliform and other life threatening pollution in these areas. Liquid swine manure wastewater contains pollutants including heavy metals, undigested medicines, pathogens (antibiotic resistant bacteria and virus), dissolved salts (sodium and carbonates), and nutrients (phosphates and nitrogen compounds).

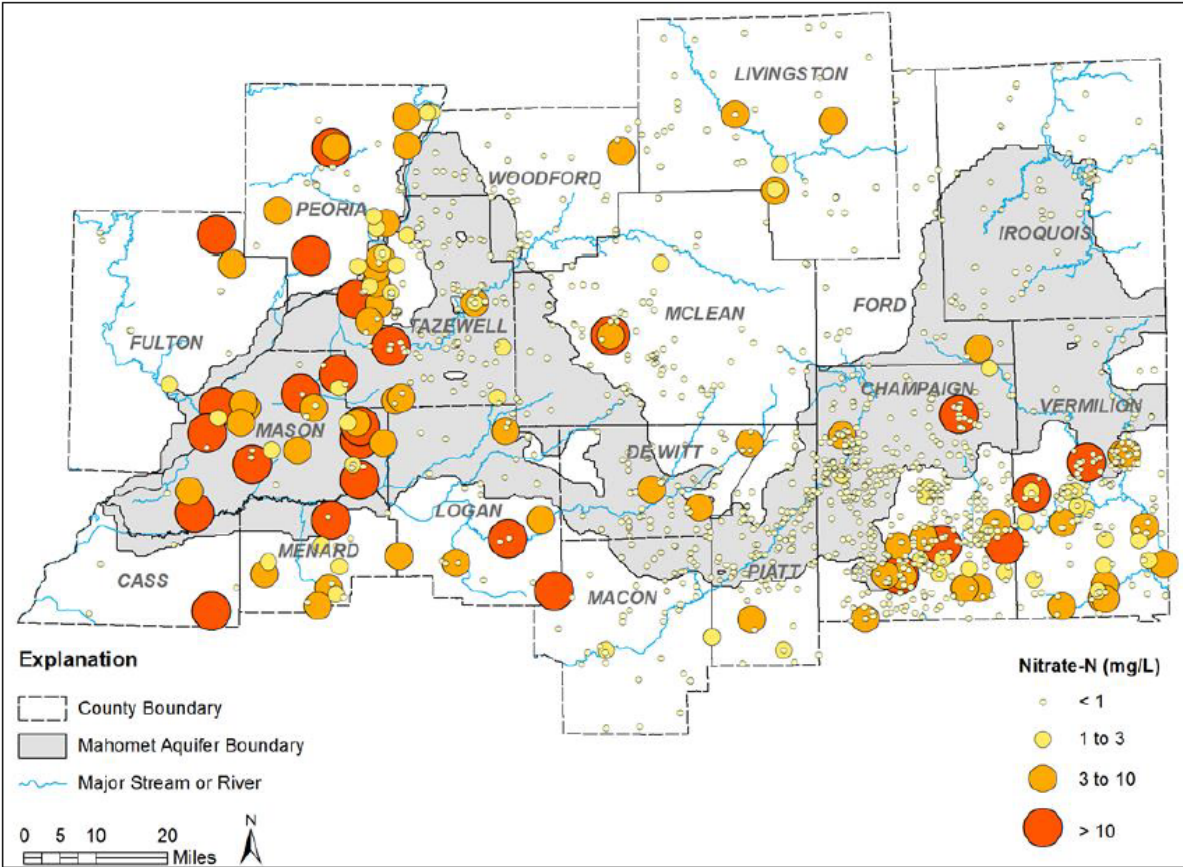


Figure 5 – Nitrate contamination in the Mahomet Sole Source Aquifer from page 17 of the 2018 Mahomet Aquifer Protection Task Force report – Figure 4.²⁵

From the 2018 report:

Figure 4 shows the distribution of nitrate concentrations in the Mahomet Aquifer region. The map includes 1,589 samples collected since 2000 from both the Mahomet and shallower sand and gravel aquifers found in the ISWS’s groundwater quality database. More than 90 percent of the samples have very low concentrations, less than 1 mg/L. Less than 2 percent are above the drinking water standard, with a third of those from Mason County where the aquifer is unconfined.

And this:

“Elevated nitrate is common in the unconfined region of the Mahomet Aquifer system, in Mason and Tazewell Counties. In this region, aquifer sands are near the surface and not protected by thick glacial tills, thus the aquifer is vulnerable to contamination from a variety of land-use activities.”

²⁵ See: <https://www2.illinois.gov/epa/topics/community-relations/sites/mahomet-aquifer-task-force/Documents/MAHOMET%20AQUIFER%20PROTECTION%20TASK%20FORCE%20FINDINGS%20AND%20RECOM MENDATIONS%202018.12.21.pdf>

1/3 of 2% (1589 samples) = 11 samples above 10 mg/l nitrates in Mason County

A rough count of the 'circles' in Figure 4 of the report shows about 40 wells sampled in the entire Mason County area.

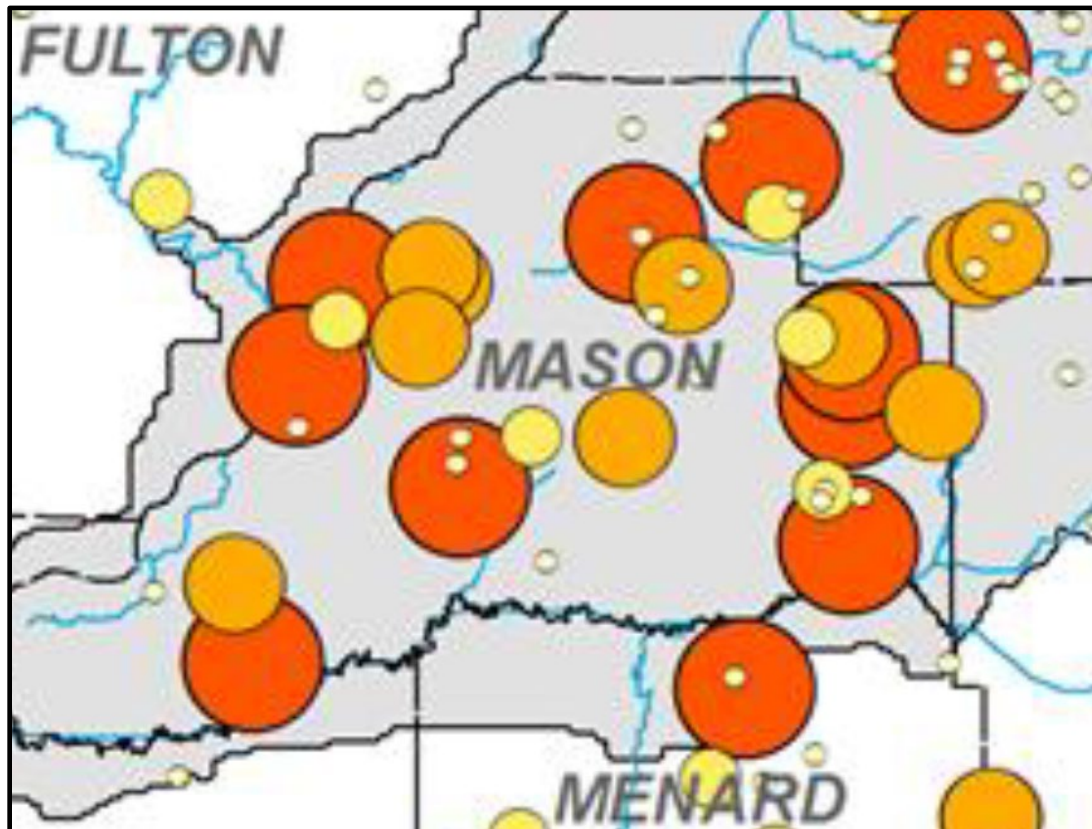


Figure 6 – Closeup of the nitrate contamination map showing Mason County.

The Mahomet Sole Source Aquifer has been contaminated. The goal is to prevent further contamination. The USEPA recommendations need to be formally withdrawn and thoroughly vetted before resubmittal to the FSA for consideration.

If the USEPA is not willing to carefully amend their recommendations, then we believe the law does not allow the FSA to rely upon the recommendations as a basis for Finding of No Significant Impact and the federal loan to Fanter Farms must be denied.