Michael Rapp

I ask the Arkansas Dept. of Environmental Quality to make the temporary moratorium on medium and large swine CAFOs permanent in north Arkansas, in order to protect the water quality of the Buffalo River watershed. I moved from central Arkansas to Tennessee three years ago, yet I still visit Arkansas regularly. I submitted a critique of the draft Environmental Impact statement in August, 2015, and that critique is attached. Further studies since that time corroborate the damage being done to the watershed and to the groundwater. Measurements have shown clearly that large CAFOs are incompatible with necessary water quality in the area.

1817 South Blvd.
Conway, Arkansas 72034
August 8, 2015

C&H Hog Farm Comments
c/o Cardno
501 Butler Farm Rd., Suite H
Hampton, VA 23666

Dear Sirs:

Thank you for the opportunity to provide comments on the August 2015 Draft Environmental Assessment for C&H Hog Farms in Newton County, Arkansas. According to the "Notice of Availability" in Friday's (August 7, 2015) Arkansas Democrat Gazette, comments could be mailed to the above address. I hope these comments are helpful in your efforts to prepare the best possible final Environmental Assessment.

While the draft EA contains helpful information, it fails to consider the possibility of catastrophic failure of the containment/treatment plan for the hog manure from the commercial farm operation. Phrases such as the following demonstrate the failure of the plan to account for human error and longer term damaging events:

p. 1-4 - [Waste holding ponds] ". . . have adequate capacity to contain a 25-year 24-hour storm event." Experience of other states (*e.g.,* the accidental release of mine sludge into Colorado's Animas River on August 6, 2015 (see Ark. Dem.-Gazette, Aug 8, 2015), the chemical spill released from a Freedom Industries facility into the Elk River in West Virginia on January 9, 2014, and the release of hog waste from the CAFO Oceanview Farms in North Carolina on June 21, 1995) show that operations (and "best intentions") can fail, and damages to the public can far exceed any "anticipated" damages. That these situations represent a scale larger than the CAFO under consideration is not the issue.

p. 3-11 - "It is unknown whether karst features occur beneath the field where wastes are applied." One of the major concerns about this CAFO is the possibility of transfer of nutrients (N & P) into a groundwater supply that easily facilitates transfer to other sites. The karst formations in southern Missouri and northern Arkansas have been well known for this phenomenon. (See, for example, http://geology.er.usgs.gov/eespteam/Midcontinent/Ozark_home/waterstudy.html.) The final EA surely should address this issue more carefully.

p. 3-13 - "Most fecal pathogens from human and animal waste usually die very quickly. Two or three months is sufficient in most cases to reduce pathogens to negligible numbers once they have been excreted or land-applied in animal wastes." Besides the hedging here ("usually" and "most cases"), there is the obvious question of whether reapplication of waste will be done more frequently than every three months. If reapplication is more frequent, then a continual production of pathogens is assured.

p. 3-13 - "All application areas receive application rates consistent with infiltration capabilities of the native soil such that there is no runoff into surrounding areas. Buffer strips (100 feet) are maintained . . . to prevent waste runoff into surrounding areas." The absence of a qualifier, such as "likely to be", and the use of the word "prevent" rather than "diminish" is notable. Is the author not familiar with the adage that "water runs downhill" (even through "buffer strips")? With the present wording, one sees the draft EA as a promotional work, rather than an evaluative work. Options are listed for ways to address unexpected events leading to failure of the plan presented, but no mention is made of what would constitute a "tipping point" whereby any option is mandated. Later (p. 3-19), a "site-specific (NMP) plan" is mentioned, but its description includes the assertion that "[a]ll land application areas receive application at rates consistent with infilatration capabilities of the native soil such that there is no runoff to surrounding areas." That assertion is not given as a goal, but as a conclusion. The final EA surely will correct that.

p. 3-14 through 3-16 - (Figures 3.2, 3.3, and 3.4) - The contrast between phosphorus concentration differences (downstream *vs.* upstream) and nitrate concentration differences begs two questions. What is the difference in mobility of nitrate and phosphate? And, what length of time

would it take for any differences to appear? Phosphate is a much less soluble ion than nitrate, depending of course on pH and other factors, so it will initially be much less mobile than nitrate.

The statement on p. 3-15, that "[n]o consistent differences in the trends in concentrations at the downstream site . . . compared with the upstream site were evident . . ." is incorrect (see Fig. 3.4), and it implies that such a concern can be dismissed. The EA should state that an increase in nitrate concentrations downstream from the CAFO is already detected (Fig. 3-4), and it is expected that phosphate concentrations downstream will increase when repeated application of manure to fields near Big Creek reaches the saturation point for the phosphate that the fields can hold.

The phrase "seasonal variability" is inserted into the narrative here (p. 3-16). What is its purpose? Seasonal variability in measurements will be largely due to rainfall and temperature differences, and it is not in any way an explanation for the uniformly higher nitrate concentrations found downstream from the CAFO. I do appreciate the efforts made to predict what effects operations such as the CAFO might have on the environment. It is possible that reasonable predictions may indicate that the watershed may be able to accommodate the pollution that this CAFO alone may contribute, but the draft EA gives no encouragement that an impartial analysis is being conducted.

p. 3-18 - "There are no data or other evidence to indicate that the [CAFO] is adversely affecting surface water quality." What about Figure 3.4 in the draft EA? (The point is not whether the current load of nitrate causes Big Creek to reach a eutrophic state, but whether the continued operation of the CAFO moves the stream in that direction.) Also, what about anecdotal evidence/complaints already given? Amazingly, the draft EA promotes the ". . . potential for improved water quality conditions . . .", as if to say this CAFO wouldn't be as bad as other options. Again, the draft EA takes on the appearance of a promotional piece, rather than an objective analysis.

p. 3-19 - "While it is highly unlikely, there could be a permitted discharge from the waste ponds should a 50-year or 100-year rainfall occur at a time when the ponds are at capacity." Consider this. If any pond is full and receives additional water, it overflows. It's not "unlikely". It will

occur. Any body of water that is full is "full". Additionally, what is the hesitance to admit that a 50-year rainfall is likely to occur every fifty years? What is actually being admitted is that, statistically, a catastrophic pollution event will occur in the longer term.

Also on p. 3-19, there are the statements, "There have been no consistent or significant differences in the concentrations of nutrients or bacteria between the upstream and downstream sites.", and, regarding such an event as an accidental discharge of waste, such an event ". . . would not result in long-term (chronic) or significant impacts to surface water quality." See above comments for pages 3-14 through 3-18.

p. 3-20 - "There is no evident conduit for groundwater to reach surface water in the area." Did the author mean, "There is no evident conduit for surface water to reach groundwater . . ."? Regardless, such an assertion would suggest that aquifers in the area aren't recharged by rainfall. Especially soluble nutrients, such as nitrates, are readily carried by surface and groundwater. (Consider the conflict regarding the elevated nitrate levels in the Illinois River entering Oklahoma from Arkansas. See the related article posted online by the *Talequah Daily Press* on January 29, 2015.) Additionally, the assertion that ". . . no nutrients are expected to leach into groundwater from the application of wastes to fields in the area." is just that, an assertion. (See above notes.)

p. 3-37 - "No significant odor impacts are anticipated and no mitigation measures are required." The draft EA gives the impression that the "public commons" (environment shared by all) is relegated to a commodity to exploit, rather than a resource for which society is a steward. The draft EA fails to address adequately the destructive effects of this CAFO on the daily lives of its neighbors. Odor and flies might appear to be minor nuisances to those whose operation produce them or those who live farther away, but they can rob closer neighbors of the hope for a pleasant environment. The inclusion of sentences (p. 2-5) such as "[a] pesticide program is undertaken to control insects, if necessary . . ." and "[w]hen possible land application is downwind from residences . . ." don't adequately deal with this concern. The description that ". . . Arkansas' Right to Farm Law . . . protects farming operations from nuisance claims . . ." is not a justification for the assertion listed in the beginning of this paragraph. The final EA can

include the description a farm can't be sued for flies or odors, but it can still acknowledge the damage to quality of life for neighbors.

p. 3-41 (Sect. 3.8 Environmental Justice) - "There would be no effects to the . . . rest of the population in the Newton County." See previous paragraph.

Thank you again for the opportunity to provide comments to the draft EA. I trust they will be helpful in developing a final EA.

Sincerely,

Michael W. Rapp