

Testimony of Duane Woltjen of Fayetteville, AR
Arkansas Pollution Control & Ecology Commission
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APPLICABILITY OF THE “Arkansas Phosphorus Index” IN KARST REGIONS OF ARKANSAS:

Reference: **Arkansas Phosphorus Index**, Publication **FSA 9531**, University of Arkansas, Division of Agriculture

This brief discusses a critical limitation of the application of the Arkansas Phosphorous Index in farm nutrient management plan development pertaining to NPDES permitting, particularly in cases of karst topography

The P Transport Potential element of the API is discussed page 3 of FSA 9531 (attached), but the text does not include the effects presented by karst topography.

Nutrients and Water Quality Concerns, Publication 9517-PD-9-05N, U of A, Division of Agriculture (attached) states:

“One major consideration in Northern Arkansas that can affect nitrate contamination is karst topography. This geographical (should read geological feature is defined as limestone formations characterized by sinkholes, springs, caves, fractured rocks, etc. The concern here is that **karst formations often have direct pathways from surface features to groundwater** with very little treatment potential from soil. In severe cases, it can be like pouring the nitrates through a pipe directly into the groundwater or introducing them directly into a well. Much of Northern Arkansas is karst topography, and **special attention needs to be given when developing nutrient management plans in this region.**” (Emphasis added.)

Nitrates are water soluble, and a portion of the phosphorus in manure is water extractable (see FSA 9531), so that fraction of the phosphates (WEP) behaves in transport similarly to nitrates. In the case of sprayed liquid or emulsion manure, application to karst facilitates rapid or direct entry of nitrates and phosphorus into groundwater. (See FSA 9517-PD-9-05N, page I last paragraph))

FSA 9531 names seven site characteristics included in the API, but karst is not among them. Nine Best Management Practices are included, but none materially address karst sites. The Encyclopedia of Arkansas Physiographic map of Arkansas (attached) shows the areas containing rocks susceptible to karst formation. All of Newton County is well within the Salem, Springfield, or Boston Mountain plateaus, all of which are well known for karst.

CONCLUSIONS:

1. NPDES permits applying to karst regions must address karst conditions; they currently do not.
2. API does not address karst conditions.
3. Best Management Practices stated in FSA 9531 do not address karst conditions.
4. NPDES permits issued and relying on API are **functionally invalid**. The first permit issued under the NPDES system (C&H) is an example.

THE SORRY IMAGE OF ADEQ:

As exemplified by the discussion above, or the fact that ADEQ has permitted a hog CAFO with accepted sewage lagoons that are allowed to leak up to 5,000 gallons per day per acre of lagoon into the earth (See NPDES permit for C&H and read the details), the **image of ADEQ is unacceptable** (preposterous, laughable, disgusting, incompetent, shameful, deceitful are common expressions of disdain seen in the media) to the public because:

1. ADEQ disregards or denies even the most obvious facts such as the fact that C&H Hog Farm is situated on karst as evidenced by geological map depictions, the presence of losing streams, springs, dye tracings showing trans-watershed flow of groundwater, well contaminations, measured nutrient increases in Big Creek, etc.
2. ADEQ now openly discredits well recognized sources of scientific data concerning water quality parameters such as most recently the National Park Service, or the testimony of highly qualified experts in karst hydrology.
3. ADEQ has failed to act on the side of caution by denying 303 d listing in any classification whatsoever for Mill Creek, Bear Creek, and Big Creek. These streams combined are **14 % of the watershed of Buffalo River!**
4. ADEQ is now seen as preparing to allow hog manure spreading in the Little Buffalo River drainage. This has the potential, if allowed, to add impaired watershed to reach **24.9% of the watershed of Buffalo River.**
5. Under leadership prior to the present Director of ADEQ, and under prior Governors, ADEQ has practiced the same responses and attitudes as those currently coming forth. Therefore today ADEQ is seen as systemically malfeasant rather than as a protector of the public interest.

As a citizen of Arkansas, I respectfully demand ADEQ, beg the Governor, and beseech the Pollution Control and Ecology Commission and the Legislature to cause ADEQ to live up to the expectations of Arkansas citizens, that is to **do everything possible, no longer the very least possible, to protect our environment beginning today.**

Respectfully Submitted for Record,

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See attachments:

FSA 9517

FSA 9531

Physiographic map of Arkansas, of rocks susceptible to karst formation. www/encyclopediaofarkansas.net