FOR IMMEDIATE RELEASE - February 25  
Contact: Craig Volland, Agricultural Committee Chair,  
913-334-0556, hartwood2@kc.rr.com

KDHE says hog lagoon seepage pollution not subject to cleanup rule  
Build-up of large mass of nitrogen a threat to aquifer in Western Kansas

In 2002, the leader of Kansas State University’s livestock waste research program predicted that over 250 tons of ammonium-nitrogen could accumulate under a 6-acre swine wastewater lagoon after 25 years of operation. He warned that after abandonment, air could change this compound to highly mobile nitrate that would likely migrate down and pollute the aquifer. Some fourteen years later KDHE has still not incorporated this advice into their livestock regulations and policy.

In fact, in a recent letter to the Kansas Chapter of the Sierra Club, KDHE said, for the first time, that this residual pollution was not subject to their cleanup rule when a swine feeding operation is shut down. This is particularly disturbing because Seaboard Foods, LLC, operates some 40 aging lagoons in western Kansas that were not equipped with full-coverage, impermeable plastic liners. There are also many other such lagoons out there owned and operated by other entities.

Ironically KDHE recently established a policy for cleanup of ammonium-contaminated soils at agricultural operations but, without explanation, exempted livestock lagoons.

"KDHE is running this parallel universe in their livestock permitting department," said Craig Volland, Chair of the Agriculture Committee of the Kansas Chapter, Sierra Club. "When the swine manure in the lagoon breaks down into ammonia and seeps through a soil liner, it is no longer considered a problem, but everywhere else, it is."

The Kansas Chapter of the Sierra Club has called upon KDHE to review its policy on abandoned livestock waste lagoons and to initiate rulemaking to correct these deficiencies.

For more information see the attached fact sheet or call Craig Volland at 913-334-0556 or email at hartwood2@kc.rr.com.

The KDHE letter was received in connection with the Sierra Club’s December 4, 2015, petition for reconsideration of the agency’s issuance of a permit for Seaboard’s massive Ladder Creek West hog factory in Greeley County. We have responded with an appeal to the KDHE Secretary. To see the KDHE letter and the Kansas Chapter appeal go to:  

For the history of the Ladder Creek West and the existing Ladder Creek sites go to
FACT SHEET on KDHE’s Inadequate Closure Rules for Abandoned Hog Factories.
February, 2016

1. Background & History.

Kansas State University Lagoon Research Project. Beginning in 1998 researchers from the Kansas State University Research and Extension studied aspects of manure lagoon waste composition, seepage and subsoil contamination and remediation. They predicted that a large plume of ammonium-saturated soil would build up under swine lagoons during the 25-year life of such facilities. The depth of this contamination would depend on the permeability and clay content of these soils, the sandier the soils, the larger the plume. [1]

Among the report's conclusions, KSU researchers noted:

8. “The greatest risk of groundwater contamination from lagoons may occur after facility closure. The large reservoir of ammonium and organic nitrogen beneath many lagoons could convert to nitrate and more readily move toward the water table.” and

9. “Clean up of lagoon sites may require some excavating and earthmoving. The cost of remediation should be considered at the time of lagoon design. It may prove more economically feasible to use a plastic liner to reduce the costs of clean up at closure. The analyses may be very species and site dependent.”

In 2002 KSU project lead researcher, J. M. Ham, reiterated these conclusions in a peer reviewed article noting also that over 250 tons of ammonium compounds could accumulate under a 6 acre swine wastewater lagoon after 25 years. [2]

Seaboard’s pledge. In 1997 Seaboard Foods, LLC was systematically expanding operations throughout southwestern Kansas and northwest Oklahoma to accommodate their hog slaughterhouse in Guymon, Oklahoma. In order to relieve local citizen concerns about groundwater contamination, Seaboard in 1998 instituted a voluntary policy of installing full coverage high-density polyethylene (HDPE) liners in all their new waste impoundments. [3] These plastic liners would be installed as extra protection over the required compacted soil liners. They had earlier, however, installed some 40 swine waste lagoons in southwest Kansas without such liners.

2. No Plastic Liners at the New Ladder Creek West Site in Greeley County.

Seaboard had followed their full coverage plastic liner policy until last year when they applied for a permit to build new complex of hog sites, called Ladder Creek West to hold as many as 132,000 mature hogs or 264,000 smaller hogs. This site will be built about nine miles due west of the existing, huge Ladder Creek site. Ladder Creek West will consist of nine unusually large anaerobic waste treatment impoundments, commonly called lagoons, each ranging from eight to eleven acres in area, 89 acres in all.

At this new site however, Seaboard has chosen to abandon its long-time policy by not covering the bottom of the lagoons. Permit documents state that they will place HDPE
liners only on the lagoon slopes to control erosion. This is confirmed by the lack of mention of plastic liners in the permit, unlike the existing Ladder Creek site permit.


The lack of plastic liners on the bottoms of the nine new lagoons at Ladder Creek West raised serious concerns with the Sierra Club about what will happen when Seaboard abandons this operation. State regulations call for a Closure Plan for a project of this size. According to soil borings, the new site is underlain by alternating strata of sandy-clay soils and more permeable, sandy soils, classified as either clayey sand (SC) or silty sand (SM). Since the lagoon bottoms will lie 15-17 feet below the original land surface, net of the berms, some will be sitting in or just above this more permeable material.

Nowhere in Seaboard's Facility Closure Plan and Financial Assurance do they acknowledge the existence of the mass of nitrogen that will exist under their lagoons after 25 years or so when the facility is closed. They list test borings only two feet deep, which is barely through the soil liner. Likewise KDHE has no specific criteria to regulate the cleanup of a large mass of subsurface contamination at a livestock operation. The plan also does not commit Seaboard to fill in the lagoons to level with the surrounding land. This indicates there will be depressions that will accumulate rainwater over time and facilitate aquifer recharge through the contaminated zone.

4. Kansas Chapter Challenges the Permit.

Despite our objections on this and other grounds, KDHE issued the permit in November of 2015. In December we filed a petition for reconsideration asking that KDHE revoke the permit until corrections were made.

In denying our petition in a letter dated January, 15, 2016, the Director of the Division of Environment stated that "Ammonium contaminated soils do not fall within the definition of process wastes under K.A.R. 28-18a-1(nn)(1)," and the associated costs do not need to be included in a cost estimate for financial assurance.

In this regulation "process waste" is defined in part as follows:

(A) Excrement from swine, wastewater, or swine carcasses;
(B) Precipitation that comes into contact with any manure, litter, bedding, or other material used in or resulting from the production of swine;

Another part of the rules says that a closure plan for a swine waste lagoon must include "a description of the procedures to be employed to remove and dispose of swine or other process wastes." So KDHE seems to be exempting this pollution from cleanup at the end of facility life, though they may say they have discretionary authority to require additional remediation later.

Organic nitrogen and ammonium under a lagoon's soil liner clearly is excrement from swine or swine wastewater. These compounds would not exist if swine excrement had not been deposited into the lagoon. Furthermore, the required removal of sludge from a lagoon undergoing closure would obviously allow precipitation to come into contact with residual "manure . . . or other material . . resulting from the production of swine" which would be manure in the form of organic nitrogen, and ammonium as the primary breakdown product from manure.

5. Another KDHE Department Requires Cleanup of Nitrogen in Soil.

Strangely KDHE's Bureau of Environmental Remediation (BER) does require the cleanup of
ammonium-contaminated soil at agricultural sites. [4] Pages 11 and 13 of that document recognize the risk that ammonium contaminated soil poses to groundwater. But then it says, without explanation, that the policy does not apply to livestock wastewater lagoons. Nonetheless, it establishes the fact that ammonium-contaminated soil is a threat to groundwater and public health and must be remediated down to a specific standard. So KDHE has established that ammonium-contaminated soil is dangerous.

We submit that it is utterly illogical and inconsistent for KDHE to allow Seaboard to avoid addressing the residual nitrogen contamination under their lagoons at time of closure.

6. The Sierra Club Files Appeal.

The Sierra Club has filed an appeal with the KDHE Secretary primarily on KDHE's inconsistency and lack of specific policies on livestock waste lagoon remediation. Given the large number of old waste lagoons in the state sitting over the High Plains Aquifer in Kansas, we think it is high time for KDHE to specifically address this issue. To see KDHE's letter and our appeal go to: http://kansas.sierraclub.org/sierra-club-kdhe-correspondence-on-policy-of-abandonment-of-livestock-waste-lagoon/

References