

MINUTES OF THE HOUSE COMMITTEE ON AGRICULTURE.

The meeting was called to order by Chairperson Joann Flower at 9:00 a.m. on January 29, 1998, in Room 423-S of the Capitol.

All members were present except: Representative Lloyd - excused

Committee staff present: Raney Gilliland, Legislative Research Department
Gordon Self, Revisor of Statutes
Kay Scarlett, Committee Secretary

Conferees appearing before the committee:
Craig Volland, President, Spectrum Technologists

Others attending: See attached list

Chairperson Flower asked committee members to review the minutes of January 21, 22, and 23. If there were corrections or additions, members were asked to contact the committee secretary before 5:00 p.m. or they will stand approved as presented.

Chairperson Flower asked for requests for introduction of committee bills. Representative Schwartz requested a committee bill allowing County Extension Council elections to be held during the county fair in an attempt to get the public more involved in their election process. Representative Freeborn moved to introduce this change in County Extension Council elections as a committee bill. Seconded by Representative Ballou, the motion carried.

Chairperson Flower requested that the committee introduce a bill concerning weights and measures, exempting vendors from the requirement that they give the purchaser full credit for the unused liquid petroleum gas remaining in a container when the container is delivered to the vendor by the purchaser. Specifically, this change would exempt barbecue grill propane containers from this provision. Representative Showalter moved to introduce this proposal as a committee bill. Seconded by Representative Dahl, the motion carried.

Raney Gilliland, Legislative Research Department, advised the committee that the Request for Comments on Proposed Livestock Waste Management Regulations published in the "Kansas Register" (Vol. 16, No. 51, December 18, 1997) are draft regulations, not proposed regulations. The Department of Health and Environment is accepting written comments from the public on the various concepts and proposals under consideration by the department until January 31, 1998. He said that the department may incorporate some, many, or none of the comments received. Mr. Gilliland stated that this written comment invitation would include the Committee as a whole or members individually.

Craig Volland, President, Spectrum Technologists, an environmental consulting firm in Kansas City, Kansas, representing the Sierra Club and Stewards of the Land, a citizens group in western Kansas, addressed the committee expressing his concerns that the Department of Health and Environment's new animal waste regulations won't solve the hog problem. He said that the proposed regulations do not address the two key areas where the Legislative Post Audit Report, January 1997, found Kansas less stringent than comparison states -- seepage standards and setback requirements between a waste control facility and a well. He advised that recent research suggests a health problem for those living near large livestock operations, but that it hasn't been proven. Mr. Volland discussed the topics of odor, lagoon construction, waste application, groundwater monitoring, setbacks, and facility closure. He answered committee questions on the many issues involved with animal waste management. Mr. Volland stated that he supports a moratorium on the permitting of new confined hog facilities in Kansas. (Attachment 1)

The meeting adjourned at 10:40 a.m. The next meeting is scheduled for January 30, 1998.

KDHE's New Animal Waste Regulations Won't Solve the Hog Problem

Odor. Aside from enforcing existing, inadequate setbacks, the new regulations explicitly avoid addressing odor reduction through facility design. The hog controversy cannot be resolved without addressing this problem in a meaningful way, including emissions from barns, lagoons, waste application and sludge piles. KDHE feels they don't have authority to regulate odor unless a health impact has been demonstrated. Recent research suggests such an impact near hog farms. See attachments.

Lagoon Construction. KDHE continues to allow self certification and keeps the weak, 0.25 inch/day seepage standard. The new design standards allow operators to dig lagoons and count the top one foot of remaining soil as an "in situ" liner. No compaction standard is specified, and no post construction permeability test is required. This technique is allowed in soils that contain substantial sand and gravel. Due to difficulty in achieving adequate compaction, this cannot be considered a true liner. The scientific literature does not verify that "biosealing" consistently prevents contamination of groundwater. Two examples of contamination from swine lagoons are attached. Also, analysis of strata down to the water table is not required.

Waste Application. KDHE says they will now require waste nutrient analysis and surface soil testing. Unfortunately operators won't have to provide soil tests before construction to confirm that all the waste can be absorbed. The attached swine wastewater analysis from Servitech Laboratories in Dodge City note that the liquid is "poor quality irrigation water." KDHE gives waste disposal priority over waste utilization by allowing operators to apply nitrogen at 120% of crop needs and phosphate at 200%.

Groundwater Monitoring. KDHE says they "may" require monitoring of groundwater near animal waste lagoons and application areas. "May" should be changed to "shall." The unwillingness of KDHE to require monitoring in the past is why we have so little data on the performance of waste control systems in Kansas. KDHE has required monitoring near slaughterhouse waste treatment systems, and that's how we discovered that clay lined lagoons were leaking and contaminating groundwater.

Double Standard. New slaughterhouse lagoons must have dual, plastic liners with leak detection while animal waste lagoons must have only a compacted soil liner. See attached KDHE Policy Directive. We can find no scientific justification for this double standard. KDHE has also started to require monitoring of slaughterhouse wastewater irrigation. The same should be done for large animal waste operations.

Setbacks. Waste application areas are not considered part of the facility for the purpose of determining separation distances. Yet they may be an important source of odor. Also Animal feeding facilities can be placed, and waste applied, as close as 100 feet from a drinking water well. If contamination reaches the Ogalalla aquifer, water users under these circumstances need wait only three to six months for the stuff to reach them. Ominously, the KDHE extends this distance to 200 feet when the operator uses the previously described "in-situ" liner technique for his lagoon. This is not just a problem of nitrates. See enclosed example of a cattle feedlot lagoon causing excessive chloride contamination.

Facility Closure. The new rules do not ensure that taxpayers will avoid picking up the tab for the clean up of abandoned facilities. The rules merely say that a "plan" must be submitted when the time comes. At no time are operators required to post a bond or financial guarantee.

*House Agriculture Committee
January 29, 1998
Attachment 1*

EXECUTIVE SUMMARY
LEGISLATIVE DIVISION OF POST AUDIT

**Question 1: Have the Department of Health and Environment's
Actions to Permit, Monitor, and Regulate
Confined Livestock Feeding Operations
Been Sufficient To Protect Kansas Water from Pollution?**

The Department's design standards are less stringent than comparison states in two key areas. page 10
Kansas' "seepage" standard specifies that the liquid from the bottom of a lagoon can't seep into the ground by more than 1/4 inch per day. Six of the eight other states allow a seepage rate of less than that—generally 1/16 inch to 1/56 inch per day. Also, Kansas requires 100 feet between a waste-control facility and a well, while most other states have a variable standard based on the quality of the well's construction.

We found some significant problems with the Department's animal waste regulatory program. page 12
Although our reviews, testwork, and interviews showed the Department had adopted many good permitting, monitoring, and enforcement procedures in regulating animal wastes, they also showed the program had serious problems that weaken its effectiveness in protecting the State's water sources from pollution.

In 93% of the 41 cases we reviewed, the Department didn't follow its procedures or requirements for regulating animal waste-control facilities. page 14
The Department often allowed facilities to operate even though their permits had expired—often years before—or hadn't met all the requirements for obtaining a permit. For example, some facilities had never submitted required seepage tests to ensure lagoons wouldn't leak excessively. Other facilities didn't meet design standards or special permit conditions. In one case, a facility has operated for nine years after test results showed a waste lagoon could seep at more than 20 times the allowed standard if it hadn't sealed effectively. The Department has no way to identify facilities that may pose a significant water pollution potential and need to be regulated. In addition, in trying to address a large backlog of renewal permits, the Department is shortcutting some potentially important steps.

We also found the Department hadn't performed the required one-, two-, or three-year inspections for nearly half the facilities in our sample; one facility hadn't been inspected since 1973, and two others hadn't been inspected since the mid-to-late 1980s. The Department also inappropriately handled complaints more than 40% of the time. When inspections or complaint investigations uncovered violations of regulations,

Comments Regarding Pages 29 - 32

In regard to the performance audit's assessment of KDHE's authority to regulate dust and odors, the Department agrees, in general, that its statutory authority to regulate sources of air pollution in Kansas is broad. The need for broad authority in this area results from the complexity of the federal air quality program and the authorities required to assure that Kansas maintains a federally-approved state air program. There are, however, several important statutory qualifications to these authorities that have relevance to the development of dust and odor programs that were not specifically discussed in the audit report.

The first involves the authority of the Department to require the abatement of nuisances under the provisions of K.S.A. 65-159. This statute does not apply generally to nuisances, but requires that the Department demonstrate such nuisances to be "injurious to the health (emphasis added) of the inhabitants." While odors may be more or less offensive to individuals, injury to health from odors is difficult if not impossible to demonstrate. Fugitive dust may be detrimental to health of some particularly sensitive or predisposed persons, but again it is extremely difficult to support a nuisance action on this basis. Where such action is supportable and necessary, the Department will not hesitate to use the authority. However, its application is much more limited and restricted than the report language implies.

Secondly, the provisions of the Kansas Air Quality Act (K.S.A. 65-3001, et seq.) were enacted primarily for the purpose of assuring compliance with the federal Clean Air Act in Kansas. The federal air program requirements applicable to the states do not require the development of nuisance dust and odor programs. While such state-specific air programs are not prohibited under the Kansas Air Quality Act, the Department has, traditionally, been held to a high standard through the administrative regulation process for justifying the need to expand the Kansas air program requirements into areas that extend beyond the federal program. The Kansas Air Quality Act also contains provisions that "encourage local units of government to handle air pollution problems within their respective jurisdictions" where many nuisance dust and odor problems can be most effectively resolved. In its initial enactment of the Kansas Air Quality Control Act in 1967, the Legislature included a "Declaration of policy and purpose" that remained a part of the Act until 1993. We understand its deletion then resulted from a general intent to eliminate policy and purpose statements from statutes. The Declaration may still be a reliable indicator of legislative intent. Except for protection of human health and safety, the policy adopted seems to mitigate against an expansive application of the statute and calls for a balancing of potentially competing interests and a balancing of state versus local authority and responsibility. Finally, K.S.A. 47-1505 provides that feedlots operated in accordance with the standards and regulations of the livestock commissioner are deemed to present prima facie evidence that a nuisance does not exist.

The statutory and legal issues surrounding regulation of dust and odors noted here, when combined with the extreme technical difficulties discussed in the report, render such control and regulation essentially impossible except where there is a clear, demonstrable threat to human health of inhabitants. These are the reasons why neither Kansas nor any of the other states surveyed regulate odors or dust in the CAFO programs. We concur with the conclusion that further study regarding dust and odors is necessary. That study and the development of useful technology and standards may make regulation feasible in the future. We do not agree that the statutory authority, except for situations threatening to human health, is available as described in the report and future legislation may be required after feasibility questions are answered.

From the NC Hog Roundtable- A coalition of 40 grassroots organizations and environmental groups concerned with the impact of NC's Hog Industry on the health of the people and the environment. Information was gathered for the Hog Roundtable by Melva Okun with the UNC-CH School of Public Health. 9/97

Health Information Related to Residents Who Live Near Hog Intensive Livestock Operations

Few studies have been conducted to study the potential impacts for near-by residents of hog intensive livestock operations. Most studies have focused on workers who are employed in the hog growing houses or at the slaughter houses. Studies show that nearby residents to hog intensive livestock operations experience similar, however less severe, health effects to workers employed in the hog growing houses.

Summary Health Information

1. Mental Health

Schiffman, Susan S., Sattely, Elizabeth A., Suggs, Mark S., and Graham, Brevick G. (1995). The effect of environmental odors emanating from commercial swine operations on the mood of nearby residents. Brain Research Bulletin, Vol. 37, No. 4, pp. 369-375. Dr. Schiffman's research showed a significant difference in mood states between people who live near intensive swine operations who experienced the odors and similar people who live outside of the odor area. Effects included increased rates for depression, tension, anger, lack of vigor, fatigue, and confusion. Males studied showed higher rates of anger and females were found to be more depressed.

2. Respiratory Impact

Thu, K., Donham, K., Ziegenhorn, R., Reynolds, S., Thorne, P.S., Subramanian, P., Whitten, p., & Stookesberry, J. (1997). A control study of the physical and mental health of residents living near a large-scale operation. Journal of Agricultural Safety and Health, 3(1), 13-26.

Residents living within a two-mile radius of a 4000 swine production facility were compared to similar rural residents but those that didn't live near the facility. Results indicate that the neighbors of the large-scale operation reported significantly higher rates of four types of respiratory tract problems, which represent toxic or inflammatory effects. The symptoms have been well documented among swine confinement workers. The study found increased rates for headaches, respiratory problems, eye irritation, nausea, weakness, and chest tightness. Subjects did not show increased mental health problems, however, they were not selected by those who were downwind of the hog operations and so were not effected by noxious odors. Respondents did indicate the view that large scale operations are creating social and class divisions in the neighborhood and community. Most believed that the construction and presence of the facility violated core rural values of being a good 'neighbor' and that the facility was viewed as eroding the cornerstones of agrarian life. The issues confronting rural residents in this study reflect an intertwining of personal, environmental, economic, and social health.

AMMONIA

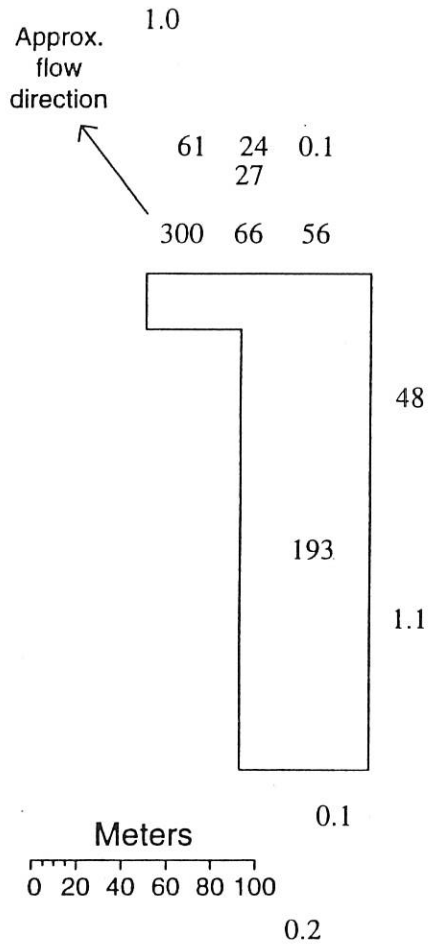


Figure 5-Ammonia-N concentrations (mg/L) in the lagoon and selected monitoring wells at Site P5, sampled 2 November 1993.

CHLORIDES

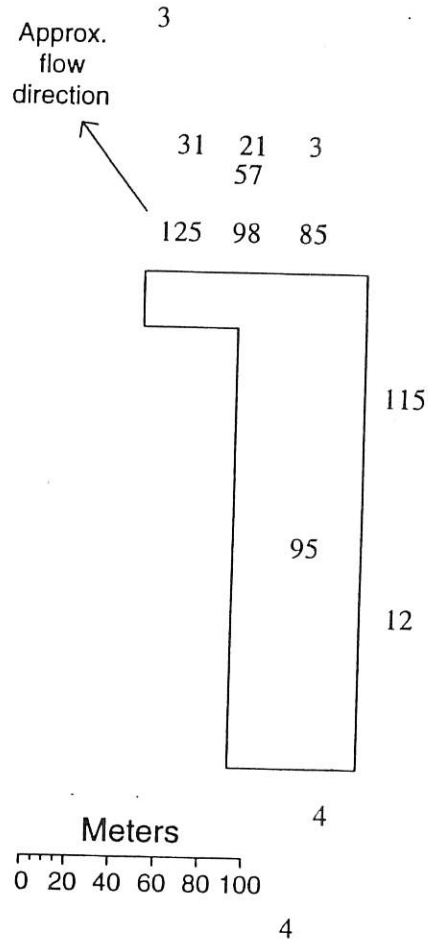


Figure 6-Chloride concentrations (mg/L) in the lagoon and selected monitoring wells at Site P5, sampled 2 November 1993.

NITRATE-N

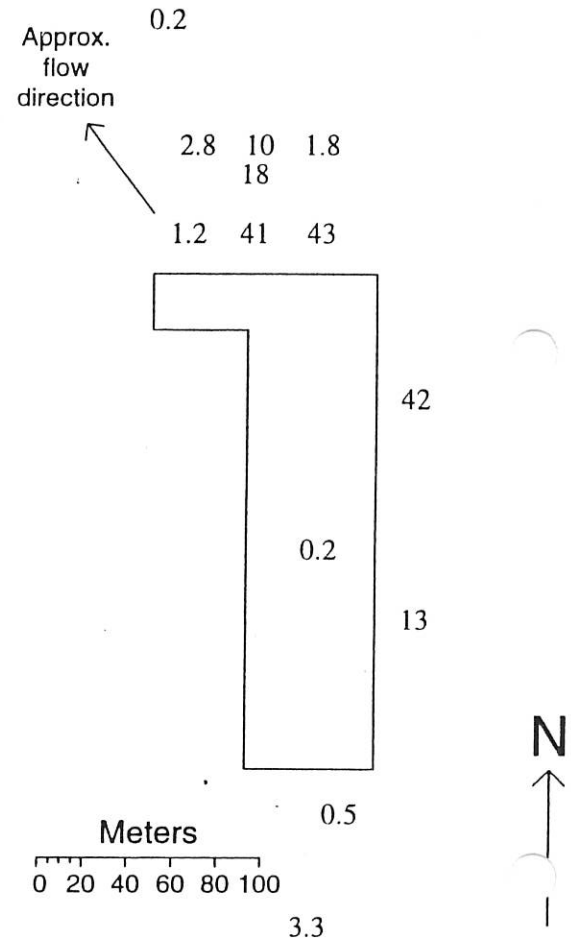


Figure 7-Nitrate-N concentrations (mg/L) in the lagoon and selected monitoring wells at Site P5, sampled 2 November 1993.

Example of Lagoon Seepage

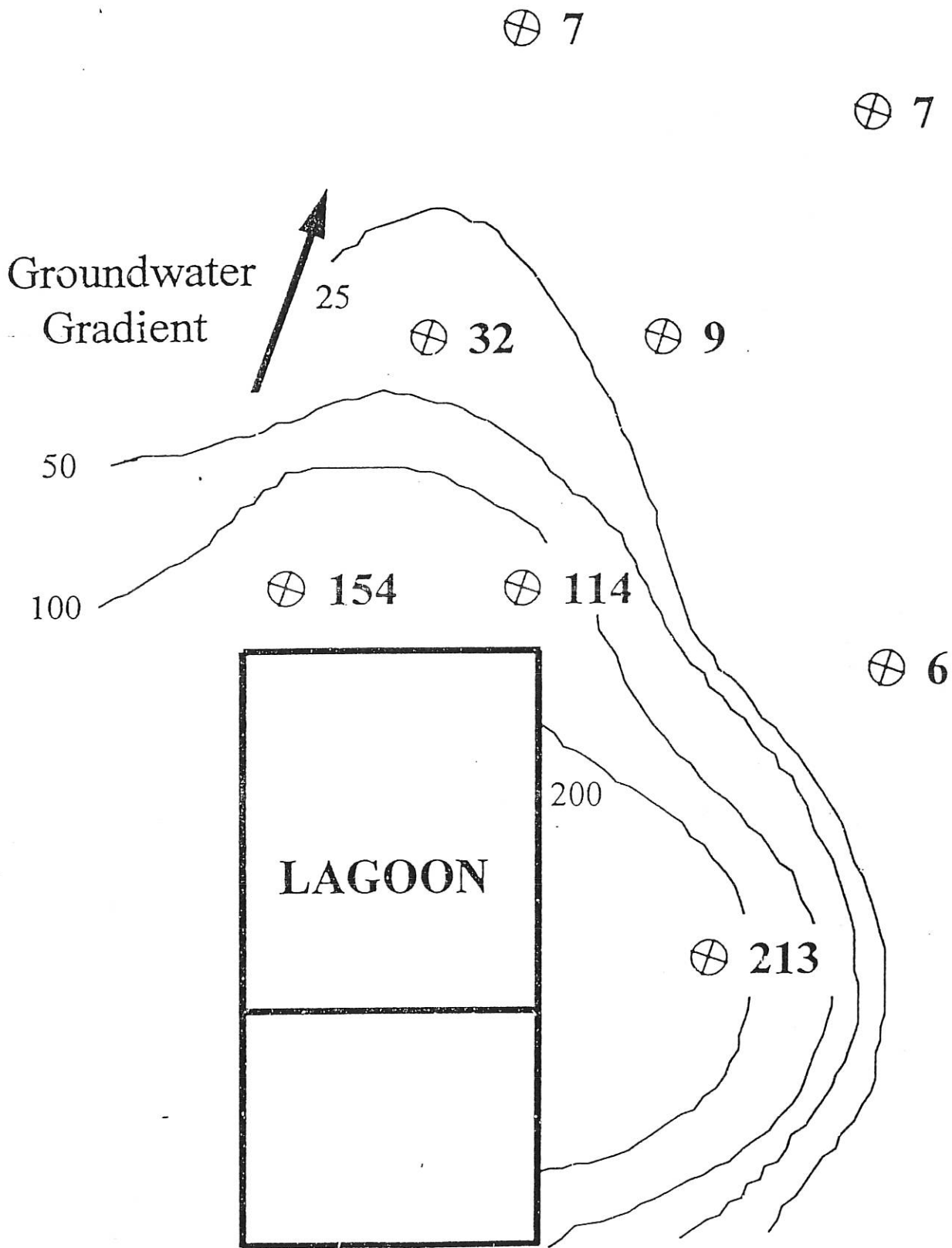
North Carolina Site. Age 4 years. Unlined (compacted with construction equipment)

1-5

SOURCE: P.W. Westerman, R.L. Huffner, J.S. Feng
 "Swine-Lagoon Seepage in Sandy Soils"
 Transactions of ASAE Vol 38(6):1749-1760

CHLORIDE

EXAMPLE OF LAGOON SEEPAGE
LINED LAGOON



SITE #15: Cl⁻ CONC (ppm) - Aug 21/95

Source: See Site #15 Nitrates

EXAMPLE OF LAGOON SEEPAGE LINED LAGOON

NITRATE

Groundwater Gradient



⊕ 9

⊕ 18

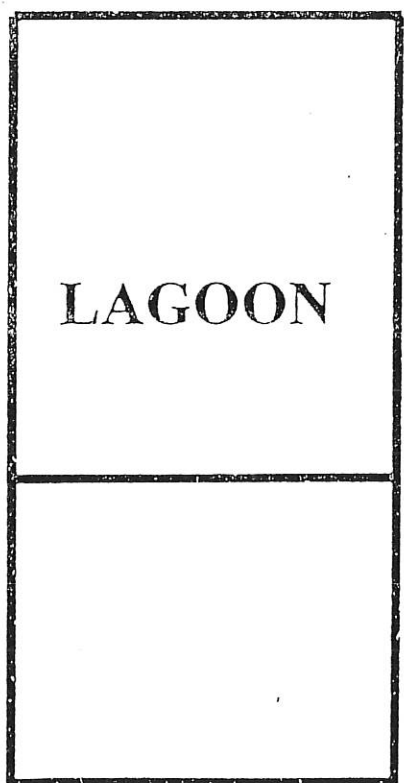
⊕ 87

⊕ 11

⊕ 36

⊕ 49

⊕ 11



LAGOON

⊕ 11

SITE #15: NO₃⁻ CONC (ppm) - July 14/95

Constructed in predominantly silty till (SC to CL): Lined with 1-7 20 inches of compacted soil; 200 sow farrow to finish, Lagoon Age=5yr. Health std = 45 ppm (as N=0)

SOURCE: "Performance of Saskatchewan Soils for Construction of Earthen Hog Manure Lagoons" Univ. of Saskatchewan, VMA ENRG LTD.



State of Kansas

Mike Hayden, Governor

Department of Health and Environment

Division of Environment

Forbes Field, Bldg. 740, Topeka, KS 66620-0002

Stanley C. Grant, Ph.D., Secretary

(913) 296-1535
FAX (913) 296-6247

Policy Memorandum #90-2
September 1990

FROM: Karl W. Mueldener, P.E.
Director, Bureau of Water

SUBJECT: INDUSTRIAL WASTEWATER POND LINER POLICY

PURPOSE:

This document states the Bureau of Water (Bureau) policy for requirements relating to industrial wastewater ponds. This policy is intended to protect the water and soil resources from a significant risk of contamination posed by earthen lagoons utilized for the containment/treatment of industrial wastewater and to provide minimum standards for the design and construction of new industrial wastewater ponds and the retrofitting of existing earthen lagoons.

BACKGROUND:

The Bureau of Water administers the Kansas Water Pollution Control Permit program established by K.S.A. 65-164 and 65-165. Wastewater ponds which discharge to surface waters or total retention through the use of evaporation, irrigation or recycle are addressed by this program. The Department has responsibilities under K.S.A. 65-171d to prevent subsurface water pollution and soil pollution. An increased emphasis, at both the state and federal level, has been placed on addressing source control as a mechanism for preventing or minimizing groundwater contamination. Since groundwater contamination from earthen ponds has been documented, the Bureau concludes construction of new industrial wastewater ponds without impermeable liner/leak detection systems represent an unnecessary risk of polluting groundwater and soils.

POLICY:

Any new or modified wastewater ponds designed and constructed for the containment or treatment of industrial wastewater, for other than non-contact cooling water or conventional domestic-type wastewater shall meet the following requirements:

1. The pond shall have a primary and secondary liner with an intermediate leak detection system.
2. The primary liner shall be at least 30 mil in thickness.
3. The secondary liner shall also be at least 30 mil in thickness, or, depending on the situation, other alternatives may be approved on a case by case basis.
4. Compaction of the pond embankments and upper 12 inches of the interior bottoms below the secondary liner shall be a minimum of 95% of the maximum standard proctor density. The maximum thickness of the layers of material to be compacted shall be 6 inches. The moisture content range shall be optimum moisture to optimum moisture + 3%. The maximum size of dirt clods in the compacted soil shall be less than one inch diameter.

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tech

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Servi-Tech Laboratories

1816 E. Wyatt Earp • P.O. Box 1397 • Dodge City, Kansas 67801
Phone: 316-227-7123 • FAX: 316-227-2047

WATER ANALYSIS REPORT

Client To:	CQ HATLEY, MARK	Lab No.:	2507
15647		Invoice No.:	D17766
7585	212 NE 19TH	Date Received:	06/28/94
	GUYMON, OK 73942	Date Reported:	06/29/94

RESULTS FOR: HITCH FARMS
 Analysis Description: WASTEWATER IRRIGATION SUITABILITY
 Sample Identification: N. LAGOON SOURCE: PIG LAGOON
 SAMPLED: 06/24

ANALYSIS	UNIT	CONC.	lbs/A-Ft	meq/l
Nitrogen:				
Total	mg/l TN	472.0	11,410.0	33.00
Ammonia	mg/l NH ₃ -N	474.0	11,410.0	20.01
Nitrate	mg/l NO ₃ -N	0.0	0.0	0.00
Phosphorus:				
Phosphorus	mg/l P	47.00	1,125.00	0.00
as P ₂ O ₅ (Calc.)	mg/l P ₂ O ₅	107.5	2,600.00	0.00
Chloride	mg/l Cl	120	2,400.00	3.00
Carbonate	mg/l CO ₃	41	820.00	0.00
Bicarbonate	mg/l HCO ₃	1,384	27,680.00	44.00
Calcium	mg/l Ca	121	2,420.00	6.00
Magnesium	mg/l Mg	78	1,560.00	3.00
Sodium	mg/l Na	104	2,080.00	4.00
Potassium	mg/l K	4	80.00	0.00
as K ₂ O (Calc.)	mg/l K ₂ O	352.00	7,040.00	1.50
Sulfur	mg/l S	6.0	120.00	0.00
Boron	mg/l B	0.770	15.40	2.1
Total Dis. Solids (Calc.)	mg/l	3,254	65,080.00	0.00
Hardness (Calc.)	mg/l CaCO ₃	648.5	12,970.00	0.00
Hardness (Calc.)	grains/gal CaCO ₃	37.00	740.00	0.00
Alkalinity (Calc.)	mg/l CaCO ₃	2,200.9	44,018.00	0.00
Electrical Conductivity	mmho/cm EC	5.10		
Sodium Adsorption Ratio (SAR)		1.6		
Adj. Sodium Adsorption Ratio (SARA)		4.8		
Sodium, % Of Cations		7.0		
Water pH		7.50		
Water pHc		6.34		

POOR QUALITY IRRIGATION WATER.

PERMEABILITY HAZARD: MEDIUM. Use with caution on fine or medium textured soils. Routine applications of gypsum and moderate leaching may be needed to maintain soil permeability. Annually monitor soil and water for changes in sodium content.

SALINITY HAZARD: VERY HIGH. May affect growth of salt tolerant crops (e.g. barley, cotton, sugarbeets). heavy leaching will be necessary to reduce soil salinity. Annually monitor soil and water for soluble salts.

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Groundwater Quality Near a Ford Co. Cattle Feedlot¹
 milligrams per liter-Average

<u>Chemical</u>	<u>Wells #1&2 Background</u>	<u>Wells # 3&13 Down gradient at Lagoon</u>	<u>Well # 4 ----- 440 feet</u>	<u>Well # 11 Downgradient 1020 feet</u>	<u>Well #12 ----- 1890 feet</u>
sodium	79.5	276.9	208.6	134	74
chloride	54.9	561.3	409.6	182	28.7
ammonia	0.1	27.7	7.2	0.2	0.1
nitrate-N	13.3 ³	1.7	5.6	5.0	24.8 ³

1. Source: "Impact on Groundwater from Livestock Waste Lagoons," Leon Hobson Masters Thesis, Kansas State Univ., April '91.
2. The maximum contaminant limit for chloride is 250 mg/l
3. Non detects included at .02 mg/l ammonia and .11 mg/l nitrate.
4. This analysis assumes the groundwater flow direstion is due east and parallel to the river as estimated by author. However a slight gradient to the southeast and toward the river is likely. This would mean background nitrate may not flow under lagoon and well number 12 may be impacted by another lagoon to the northwest or by inorganic fertilizers. This potential error would be less likely to affect the other monitoring wells.