ANIMAL WASTE MANAGEMENT PLAN

Randy Ritchie

Poultry Production Operation
Section 4, T.16N, R.24E.
Adair County, Oklahoma

Agricultural Environmental Management Services
(AEMS)

Oklahoma Department of Agriculture, Food and Forestry
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Oklahoma City, OK 74105

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Prepared September 2006
Plan to be Revised September 2012

A. INTRODUCTION

Plants remove from the soil four to ten times as much nitrogen as phosphorus. Consequently a significant buildup of phosphorus in the soil can take place over a period of time. Much of the build up can be lost through runoff, which greatly reduces the quality of water downstream. Due to these water quality concerns, future land application of poultry litter will be based upon the phosphorus content in the soil and the amount of phosphorus in the chicken litter applied. The law requires that the Natural Resources Conservation Service (NRCS) recommendations for litter application rates be followed. NRCS recommends the application of a maximum of 200 lbs. of phosphorus per acre per year if the soil test shows a phosphorus index below 120. If the soil tests phosphorus index is between 120 and 300 then the rate applications are reduced by one-half. If the Phosphorus Index is above 300 then no litter is to be applied. If the maximum amount of litter that can be applied does not supply sufficient nitrogen for the desired production then the nitrogen from other sources can be applied (ex: ammonium nitrate). About 50 lbs of nitrogen is needed to produce one ton of bermuda grass and about 60 lbs is needed to produce one ton of fescue.

B. DESCRIPTION OF OPERATION

This waste management plan includes the production, handling, and distribution of waste and litter from four broiler houses. These houses are located in the Tenkiller Reservoir nutrient limited watershed and in an area of highly vulnerable groundwater. One house is 40 feet wide and 400 feet long, one house is 40 feet long and 440 feet wide, and two houses are each 42 feet wide and 500 feet long. They are located in Section 4, T.16N, R.24E., Adair County, Oklahoma. On an average there will be 5.5 batches of chickens each year for a yearly production of 519,750 birds. Total average yearly waste and litter production is estimated to be 570 tons (including cake out) if cleaned out annually, or 1000 tons if cleaned out every second year, and 1430 tons if cleaned out every third year. This waste is accumulated on rice hulls bedding. Cake out is done after each batch of chickens. Much of the litter is being removed during cake out. No chicken litter is being used on their property. There is a litter storage building available. If it should become necessary to store litter outside it will be protected from outside water and there will be no runoff from the stockpile. There are 274 acres in this property of which about 200 acres (owner's estimate) are suitable for receiving litter when phosphorus levels are at acceptable levels for receiving litter.

C. APPLICATION RATES

All fields in Section 4, T.16, R.24E., Adair County, Oklahoma

Nutrient Content:
According to the latest (04/06) litter test, each ton of litter contains:
N-66 lbs. P_2O_5-55 lbs. K_2O-46 lbs.

No soils test is required since no litter is being applied in this property.
There is a small dairy on this property. The cows are not confined except at milking time. The small amount of manure produced is placed on the less desirable parts of the farm. Chicken litter will not be spread where cow manure is used.

D. DEAD BIRD DISPOSAL

Birds from normal death loss are disposed of in an incinerator. Catastrophic losses are disposed of in a pit.

E. WASTE UTILIZATION GUIDELINES

1. All waste will be applied in accordance with all state and local laws and ordinances.
2. All waste applications will be timed to minimize pollution.
3. Any one of the following conditions will prohibit the surface application of litter:
   a. High velocity wind is toward a populated area.
   b. There is high probability of a runoff producing rainfall.
   c. The ground is frozen.
   d. Saturated conditions exist.
   e. The Phosphorus Index is 300 or greater in nutrient limited watersheds.
   f. The Phosphorus Index is 400 or greater in non-nutrient limited watersheds.
   g. Frequently flooded areas.
   h. Areas where there will be discharge from the application site.
   i. Severely eroding areas.
   j. Soils are less than 10 inches deep.
   k. Slopes are greater than 15% (fifteen feet rise or fall in 100 feet).
   l. Very stony areas.

F. BEST MANAGEMENT PRACTICES

1. Apply litter not to exceed amounts given in the waste management plan or a revised recommendation based on new soil and litter tests.

2. **Obtain new soil and litter tests every year. Soil tests are needed only in fields where litter is to be applied.**

3. **Secure enough soil tests to adequately represent the conditions of your farm. Generally one composite sample is needed for each 40 acres where litter is to be applied.**

4. **Maintain a good growth of grass at all times. Grass should not be less than 4 inches tall. This reduces runoff, erosion, and nutrient loss.**

5. **Spread litter during growth season of dominant plants.**

6. **Control weeds and brush to maintain a good stand of grass.**

7. **Do not apply litter within 50 to 100 feet of streams, ponds, and water wells. Buffer strips should be maintained in these areas.**

8. **On slopes of 8 to 15%, use one-half the normal prescribed rate of litter.**

G. **ENVIRONMENTAL STATEMENT**

There are ponds and intermittent streams on this property that require special precautions when spreding litter (See Statement F. 7). Phosphorus levels in the soil are a major concern on this property.

H. **ADDITIONAL INFORMATION**

1. **The dominant grasses are bermuda grass and fescue.**

2. **Owner does his own cake out and clean out.**

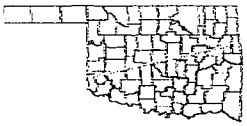
3. **Keep records of amount of litter produced, date of total clean out, and where litter is applied if not sold.**

4. **Any person taking litter from this property must be given a copy of a current litter test.**

5. **Litter and soil testing should be done about one month before time of total clean out. This will allow adequate time for test results to be returned and used in determining application rates.**

6. **If assistance is needed, please call Ed Abernathy at (918) 647-3094.**

S4 T16N R24E
Adair County, OK



0 660 1320 1980 2640 Feet

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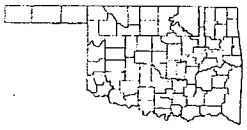
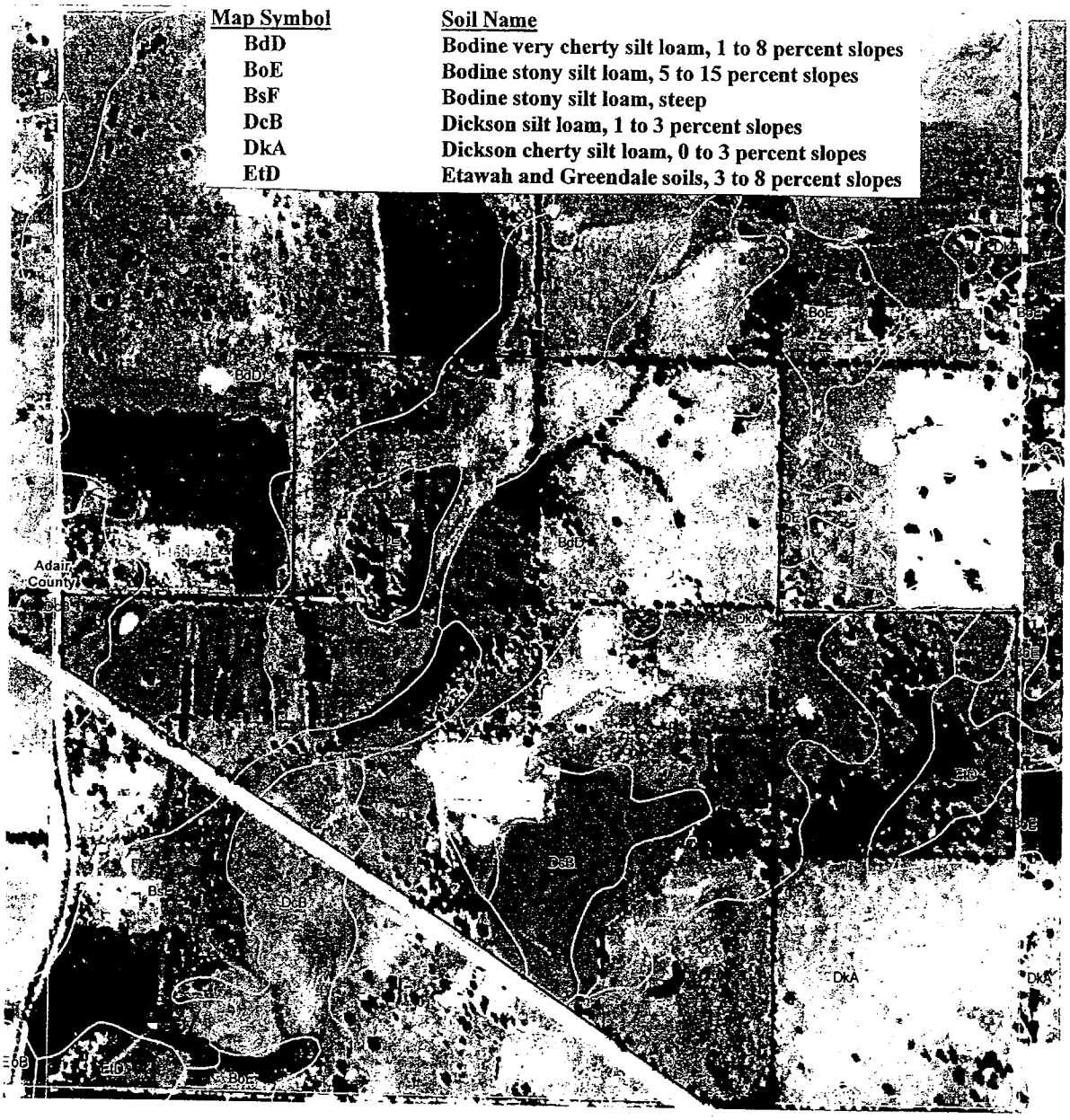
S4 T16N R24E
Adair County, OK



Map Symbol	Soil Name
BdD	Bodine very cherty silt loam, 1 to 8 percent slopes
BoE	Bodine stony silt loam, 5 to 15 percent slopes
BsF	Bodine stony silt loam, steep
DcB	Dickson silt loam, 1 to 3 percent slopes
DkA	Dickson cherty silt loam, 0 to 3 percent slopes
EtD	Etawah and Greendale soils, 3 to 8 percent slopes



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Map Symbol	SOIL NAME AND DESCRIPTION
BdD	**Bodine very cherty silt loam, 1 to 8 percent slopes** This is a deep, excessively drained soil with a very cherty silt loam surface layer. The subsoil is predominately chert fragments with small amounts of silty clay loam in the crevices. This soil is low in natural fertility organic material content and available water capacity.
BoE	**Bodine stony silt loam, 5 to 15 percent slopes** The surface layer is a very stony silt loam and the subsoil is mostly chert with small amounts of very cherty silty clay loam. This soil is stony on the surface. It is low in natural fertility, organic matter content and available water capacity.
BsF	**Bodine stony silt loam, steep** This is a deep excessively drained, soil with a stony silt loam surface layer. The subsoil is nearly all chert fragments with only a small amount of very cherty silty clay loam in the crevices. This soil is low in natural fertility, organic matter, content and available water capacity.
DcB	**Dickson silt loam, 1 to 3 percent slopes** This is a deep soil with a silt loam surface layer and a cherty silt clay loam subsoil. It is high in natural fertility and organic matter content and medium in available water capacity.
DkA	**Dickson cherty silt loam, 0 to 3 percent slopes** This is a deep soil with a cherty silt loam surface layer and a cherty silty clay loam subsoil. It is high in natural fertility and organic matter content and medium in available water capacity.

EtD	**Etawah and Greendale soils, 3 to 8 percent slopes** **These are deep, well drained soils with a gravelly silt loam surface layer and a gravelly silty clay loam subsoil. These soils are medium in natural fertility, organic matter content, and available water capacity.**

http://139.78.184.162/soil/FertilityReport.asp?LoginLabID=410602 4/20/2006

Soil, Water & Forage Analytical Laboratory
Oklahoma State University
048 Agricultural Hall, Stillwater, OK 74078
Email: Soils_lab@mail.pss.okstate.edu

ANIMAL WASTE ANALYSIS REPORT

ADAIR COUNTY EXTENSION OFFICE	Name:	Lab ID No.:	410342
220 W DIVISION	Randy Ritchie	Customer Code:	1
COURTHOUSE SUITE 1	Location:	Sample No.:	6997
Stillwell OK 74960	Rt. 4, Box 2210	Received:	4/13/2006
(918) 696-2253	Stilwell, OK 74960	Report Date:	4/20/2006

TEST RESULTS FOR: *Solid* SOURCE: *Poultry*

TEST	As Received	Dry Basis(lbs/ton)	As Received(lbs/ton)
Moisture	25.5 %		
Dry Matter	74.5 %		
pH	8.1		
EC	10210 µS		
Soluable Salts	**6841 ppm**	**18**	**14**
Phosphorus(P2O5)	**2.7 %**	**73.1**	**54.5**
Calcium(Ca)	1.9 %	50.4	37.6
Potassium(K2O)	**2.3 %**	**61.1**	**45.6**
Magnesium(Mg)	0.4 %	10.6	7.9
Soduim(Na)	0.7 %	18.3	13.7
Sulfur(S)	0.6 %	17.1	12.7
Iron(Fe)	229.6 ppm	0.6	0.5
Zinc(Zn)	229.2 ppm	0.6	0.5
Copper(Cu)	256.9 ppm	0.7	0.5
Manganese(Mn)	276.5 ppm	0.7	0.6
Total C	29.6 %	793	591.2
Total N	**3.3 %**	**89.1**	**66.4**

Signature

Signature

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0 660 1320 1980 2640 Feet

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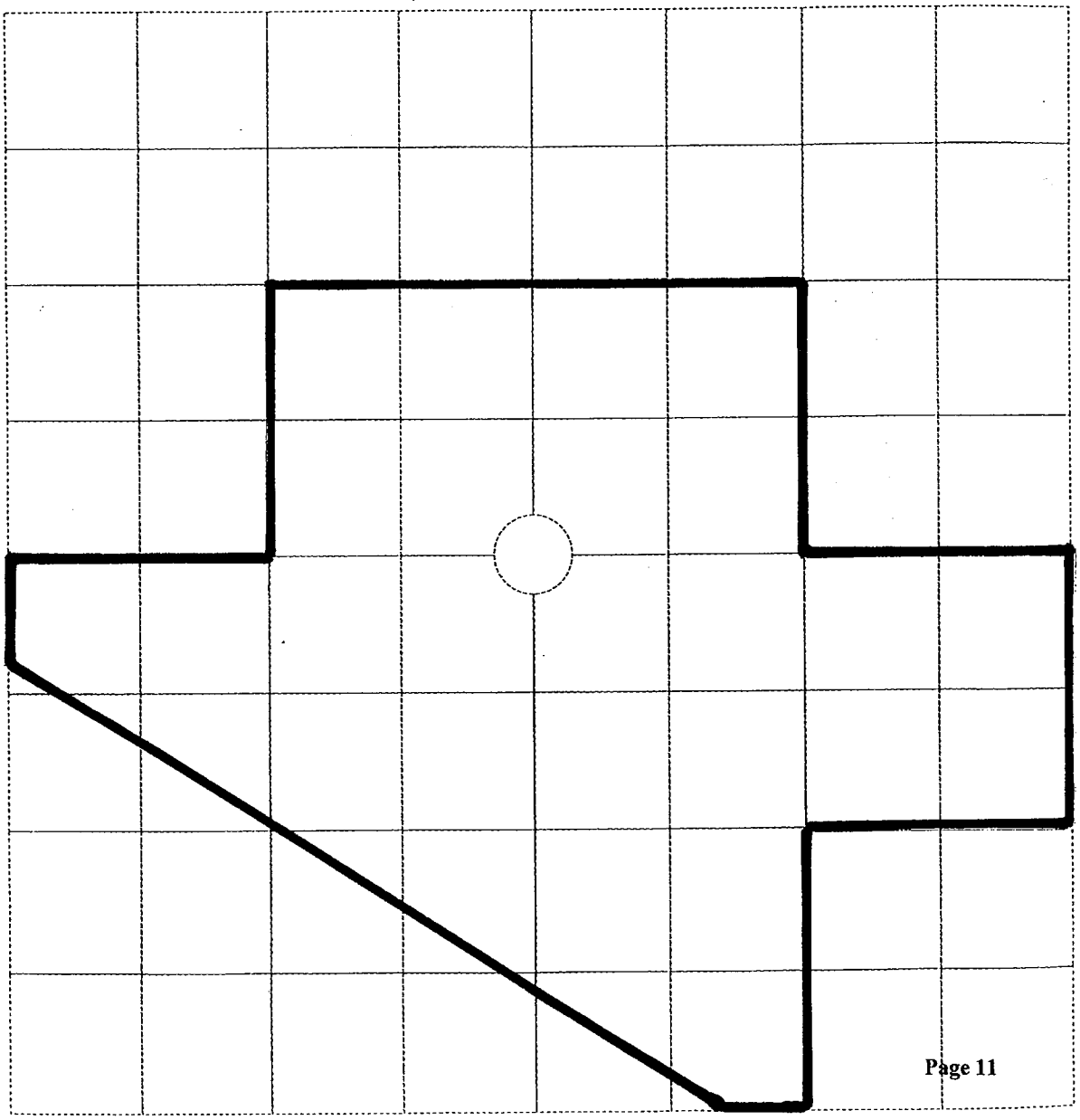
OKLAHOMA DEPARTMENT OF AGRICULTURE, FOOD, & FORESTRY
AGRICULTURAL ENVIRONMENTAL MANAGEMENT SERVICES
Legal Location Platt

NORTH

Size:
10 acre

Scale:
1" = 660 '

Facility Name Randy Ritchie
Legal Desc. ___, ___, ___ Sec 4 T 16N R 24E Mer. ___
County Adair County, Oklahoma



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