ANIMAL WASTE MANAGEMENT PLAN

Samson Herr
Poultry Production Operation

Section 10 T18N R25E
Adair County, Oklahoma

F63

Agricultural Environmental Management Services
(AEMS)

Oklahoma Department of Agriculture, Food and Forestry
PO Box 528804
Oklahoma City, OK 74105

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OKLAHOMA DEPARTMENT OF AGRICULTURE

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Samson Herr
Plan Prepared May 2005
Plan will be revised by May 2011

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 maximum of 200 lbs. of phosphorus per acre per year if the soil test shows a phosphorus index below 250. If the soil tests phosphorus index is between 250 and 400 then the rate applications are reduced by one-half. If the phosphorus index is above 400 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 two breeder houses. These houses are in an area of highly vulnerable groundwater. These houses are each 40 feet wide and 520 feet long. There is an egg room at the end of each house. They are located in Section 10, T.18N, R.25E., Adair County, Oklahoma. There is one batch of chickens each year with adequate time between batches for litter removal and preparation for next batch. There are 9,200 birds (hens and roosters) in each house for a total of 18,400 birds annually. Total average yearly waste and litter production is estimated, by the property owner, to be 112 tons. The bedding material consisting of wood shavings is spread in center of the house from end to end. The litter used on this farm is spread on the surface of the ground when removed from the houses if conditions are right for spreading. Clean out is done in the spring. 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 60 acres in this property of which about 50 acres (owner's estimate) are suitable for receiving litter.

C. APPLICATION RATES

Field 1 (50ac.): Section 10, T.18N., R.25E. Adair County, Oklahoma

Nutrient Content:
According to the latest (1/14/05) litter test, each ton of litter contains:
N-83 lbs. P_2O_5-76 lbs. K_2O-58 lbs.

Soil Test results (1/12/05):
NO_3-44 lbs. P. Index-84 K Index- 127

Soil test P Index is below 250. Litter can be applied at the full rate (200 lbs of P_2O_5 per acre). 200 lbs. P_2O_5 divided by 76 lbs P_2O_5 per/ton of litter = 2.6 tons of litter per acre maximum application rate. This 2.6 tons will supply enough nitrogen to produce about 3 tons of bermuda grass or about 2.5 tons of fescue. There will be some production from the nitrogen already present (44 lbs.) in the soil. (Fertilizer is 70 percent effective the first year.)

To make the fertilizer more readily available for plant use apply 1.2 tons of ECCE lime per acre.

Application Summary:

Yearly production from two houses = 112 tons. 112 tons divided by 2.6 tons per acre = 43 acres that can be covered at the full rate. Mr. Herr only uses about 46 tons of litter annually. This 46 tons will cover about 18 acres at the full rate of 2.6 tons per acre. If more grass production is desired than all of the litter can be used on this property.

D. DEAD BIRD DISPOSAL

Birds from normal death loss are disposed of in an incinerator.

Catastrophic losses are disposed of in a dug pit as approved by the appropriate poultry inspector. An alternate method is infield composting.

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.

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 spreading litter (see item 7, Section F).

H. ADDITIONAL INFORMATION

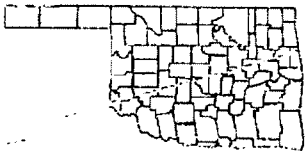
1. The dominant grasses are bermuda grass and fescue.

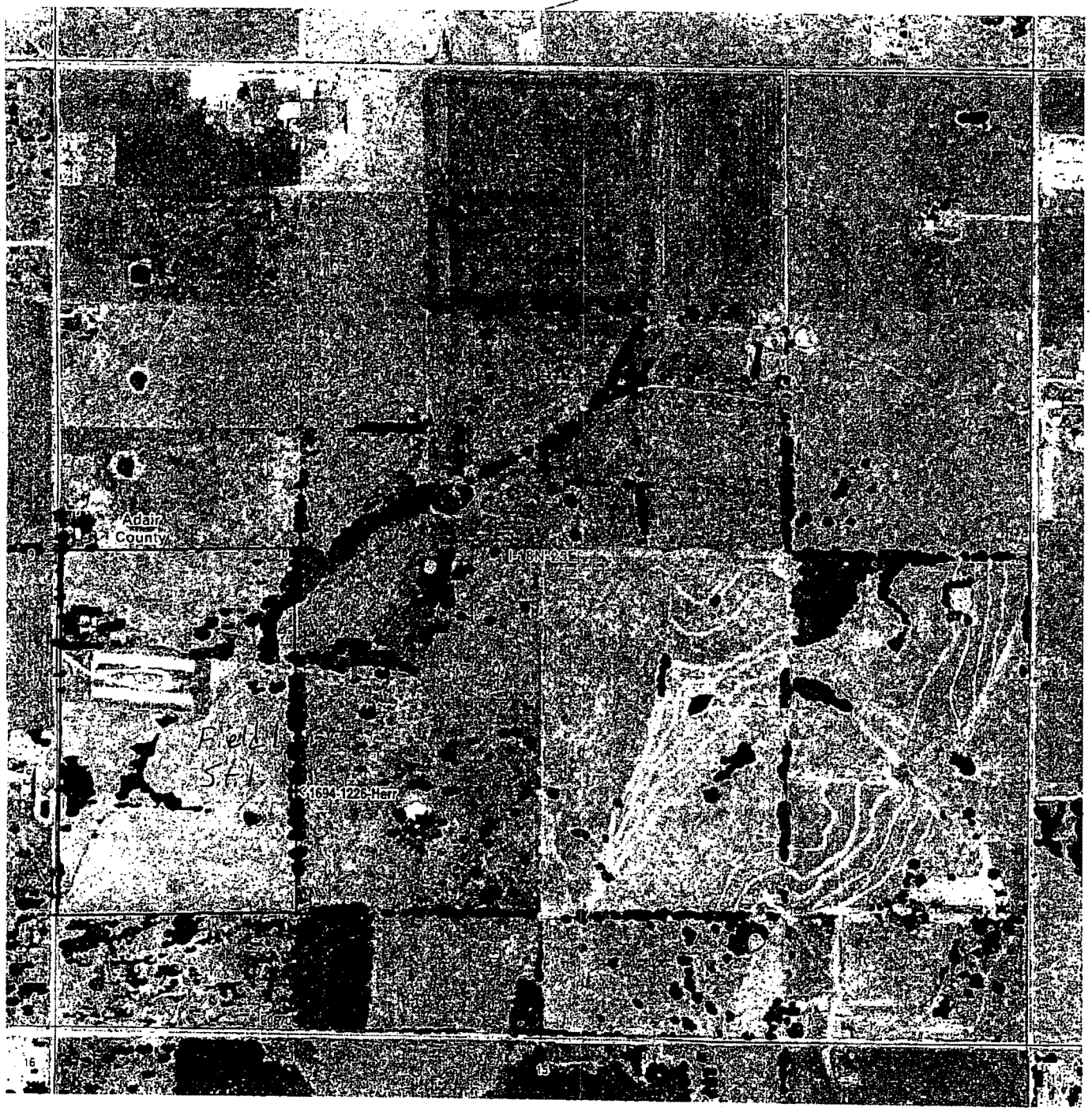
2. As compared to other producers, this is an unusually small amount of litter to be produced in 2 houses.

2. **Keep records of the amount of litter produced, how much is used on this property, where on the property it is applied, and the year it is applied.**

3. **A commercial hauler is cleaning out the houses and hauling the litter.**

S10 T18N R25E
Adair County, OK





SE-SW/4 est

0 670 1340 2010 2680 Feet

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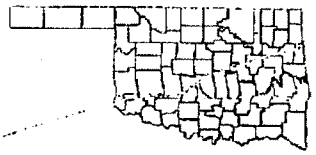
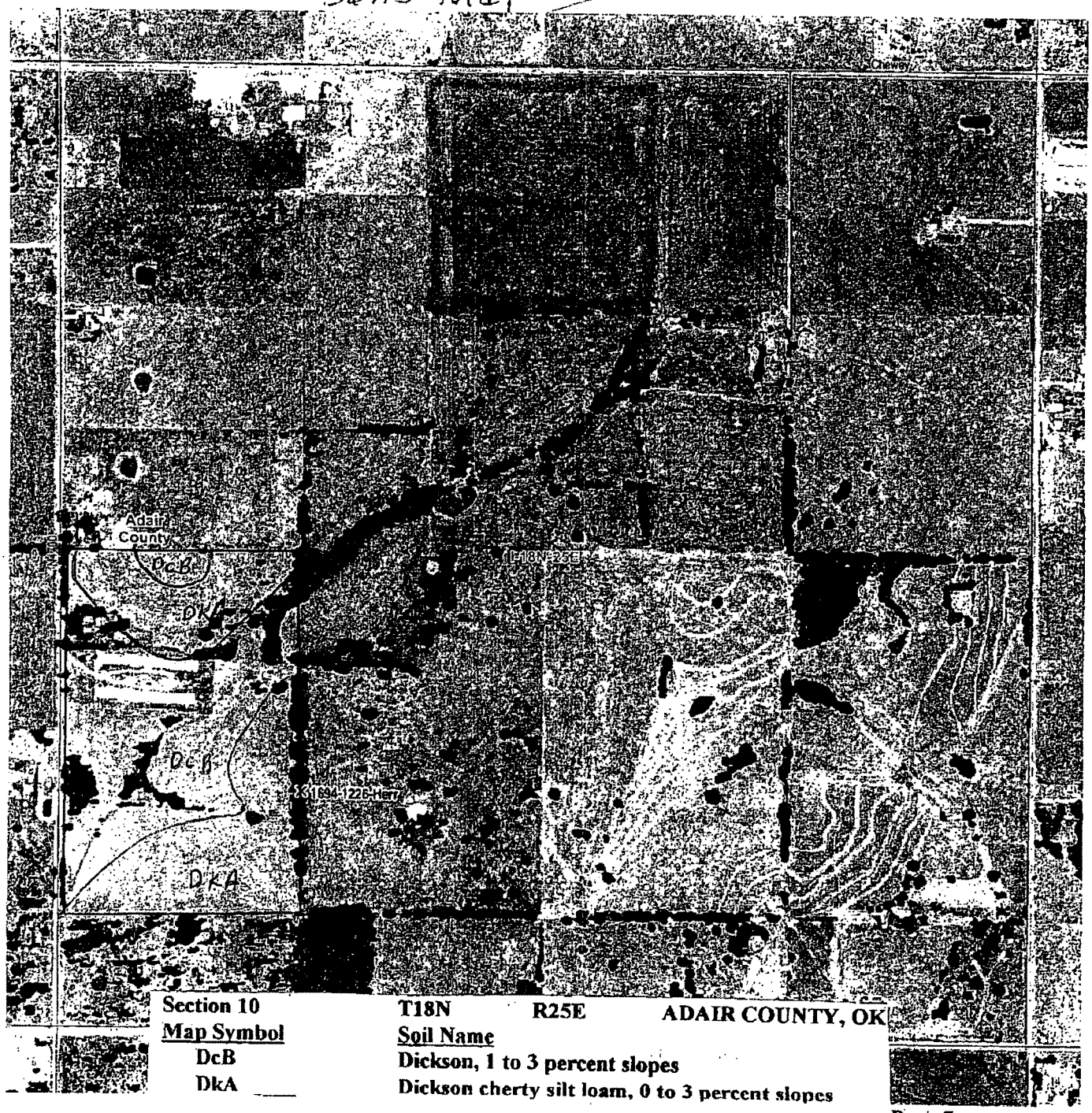


Soils Map



Section 10	T18N	R25E	ADAIR COUNTY, OK
Map Symbol	**Soil Name**		
DcB	Dickson, 1 to 3 percent slopes		
DkA	Dickson cherty silt loam, 0 to 3 percent slopes		

0 670 1340 2010 2680 Feet

Map Symbol	SOIL NAME AND DESCRIPTION
DcB	Dickson, 1 to 3 percent slopes This is a deep soil with a silt loam surface layer and a cherty silty clay loam subsoil. It is high in natural fertility, 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 low in available water capacity.

SOIL, WATER & FORAGE ANALYTICAL LABORATORY
Division of Agricultural Sciences and Natural Resources • Oklahoma State University
Plant and Soil Sciences • 048 Agricultural Hall • Stillwater, OK 74078
Email: soils_lab@mail.pss.okstate.edu
Website: http://clay.agr.okstate.edu/extensio/swfai/intro.htm

ANIMAL WASTE ANALYSIS REPORT

ADAIR COUNTY EXTENSION OFFICE
220 W DIVISION
COURTHOUSE SUITE 1
STILLWELL , OK 74960

Name: Samson Herr
Location: Rt. 1 Box 464 Westville, OK 74965
litter

Lab ID No: 365696
Customer Code: 1
Sample No: 6357
Date Received: 1/10/2005
ReportDate 1/14/2005

TEST RESULTS FOR: Solid SOURCE: Poultry

TEST	As Received	As Received lbs/ton	Dry Basis lbs/ton
Moisture	17.4 %		
DryMatter	82.6 %		
pH	8.7		
EC	7330 µS		
Soluble Salts:	4911 ppm	9.82	11.90
Phosporus (P2O5)	3.79 %	75.8	91.8
Calcium (Ca)	8.01 %	160.3	194.1
Potassium (K2O)	2.91 %	58.2	70.5
Magnesium (Mg)	0.39 %	7.7	9.4
Sodium (Na)	0.57 %	11.4	13.8
Sulfur (S)	0.57 %	11.5	13.9
Iron (Fe)	221.2 ppm	0.44	0.54
Zinc (Zn)	480.9 ppm	0.96	1.17
Copper (Cu)	382.6 ppm	0.77	0.93
Manganese (Mn)	681.1 ppm	1.36	1.65
Total C	26.9 %	537.4	651.0
Total N	4.1 %	82.8	100.3

Signature

Oklahoma State University, U.S. Department of Agriculture, state, and local governments cooperating. Oklahoma Cooperative Extension Service offers its programs to all eligible persons regardless of race, color, national origin, religion, sex, age or disability and is an Equal Opportunity Employer

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

SOIL TEST REPORT

ADAIR COUNTY EXTENSION OFFICE
220 W DIVISION
COURTHOUSE SUITE 1
STILLWELL OK 74960
(918) 696-2253

Name: Sampson Herr
Location: Rt. 1, Box 464
Westville, OK 74965

Lab ID No.: 365546
Customer Code: 1
Sample No.: 6356
Received: 1/10/2005
Report Date: 1/12/2005

Reaction		NO_3-N (lbs/acre)		Test Index(mehlich3)	
pH:	5.4	Surface:	44	P:	84
Buffer Index:	6.8	Subsoil:		K:	127

Secondary Nutrients	Micronutrients	Additional
Surface SO_4-S (lbs/A):	Fe (ppm):	OM (%):
Subsoil SO_4-S (lbs/A):	Zn (ppm):	
Ca (lbs/A):	B (ppm):	
Mg (lbs/A):		

Interpretation and Requirements for *Bermudagrass* (YIELD GOAL = *3 tons/acre*)

Test	Interpretation	Requirement	Recommendation and Comments
pH	Lime needed	1.2 tons ECCE/A	
Nitrogen	Deficient	106 lb /acre N	
Phosphorus	Adequate	None	
Potassium	80 % Sufficient	49 lb /acre K_2O annually	

Additional Comments:

pH level becoming low
Will need to be addressed or forage
production will be limited

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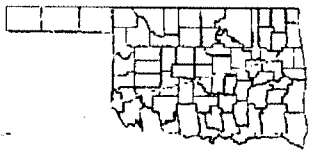
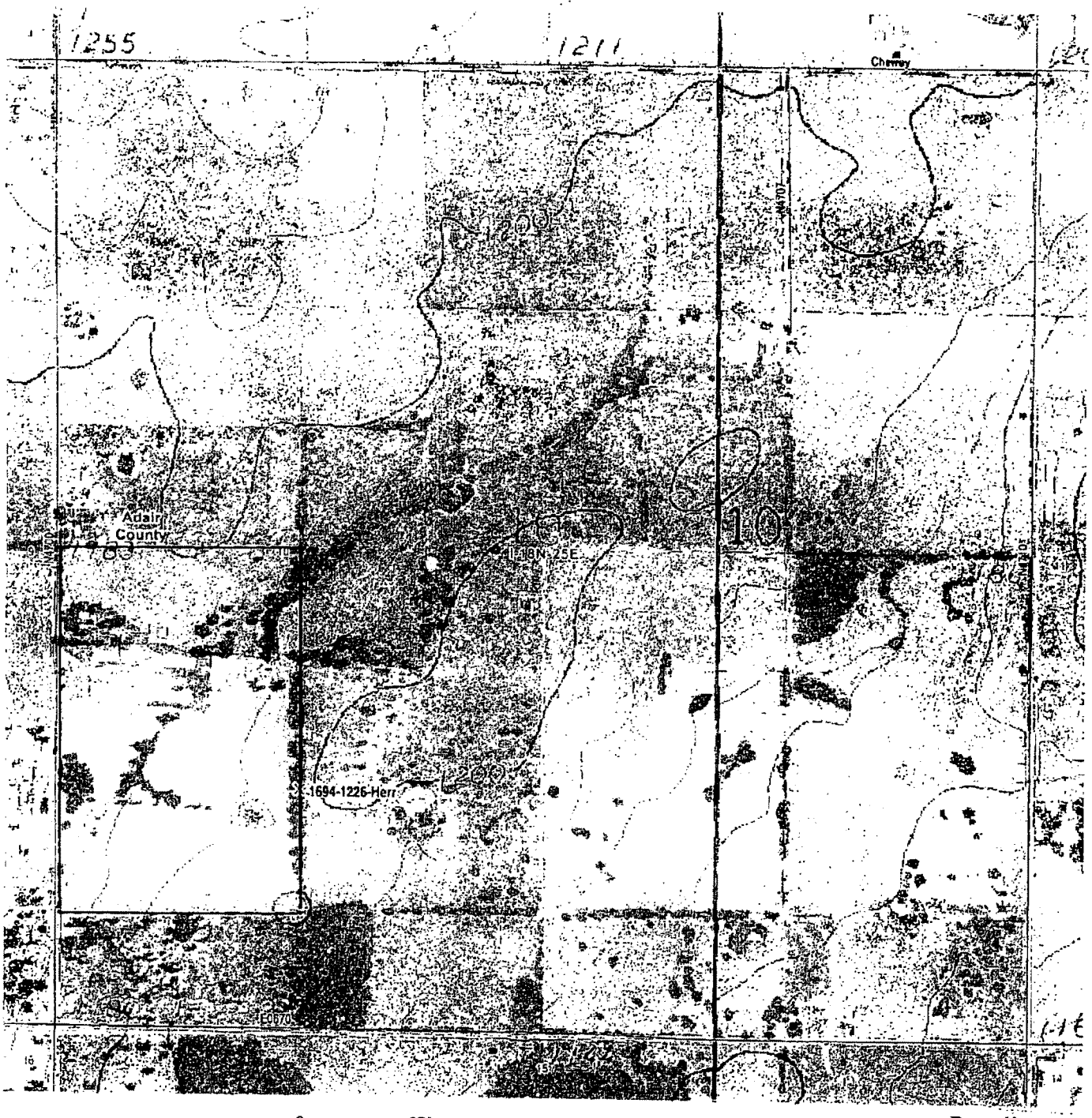
Adair County, OK





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OKLAHOMA DEPARTMENT OF AGRICULTURE

WATER QUALITY SERVICES DIVISION

Legal Location Platt

NORTH

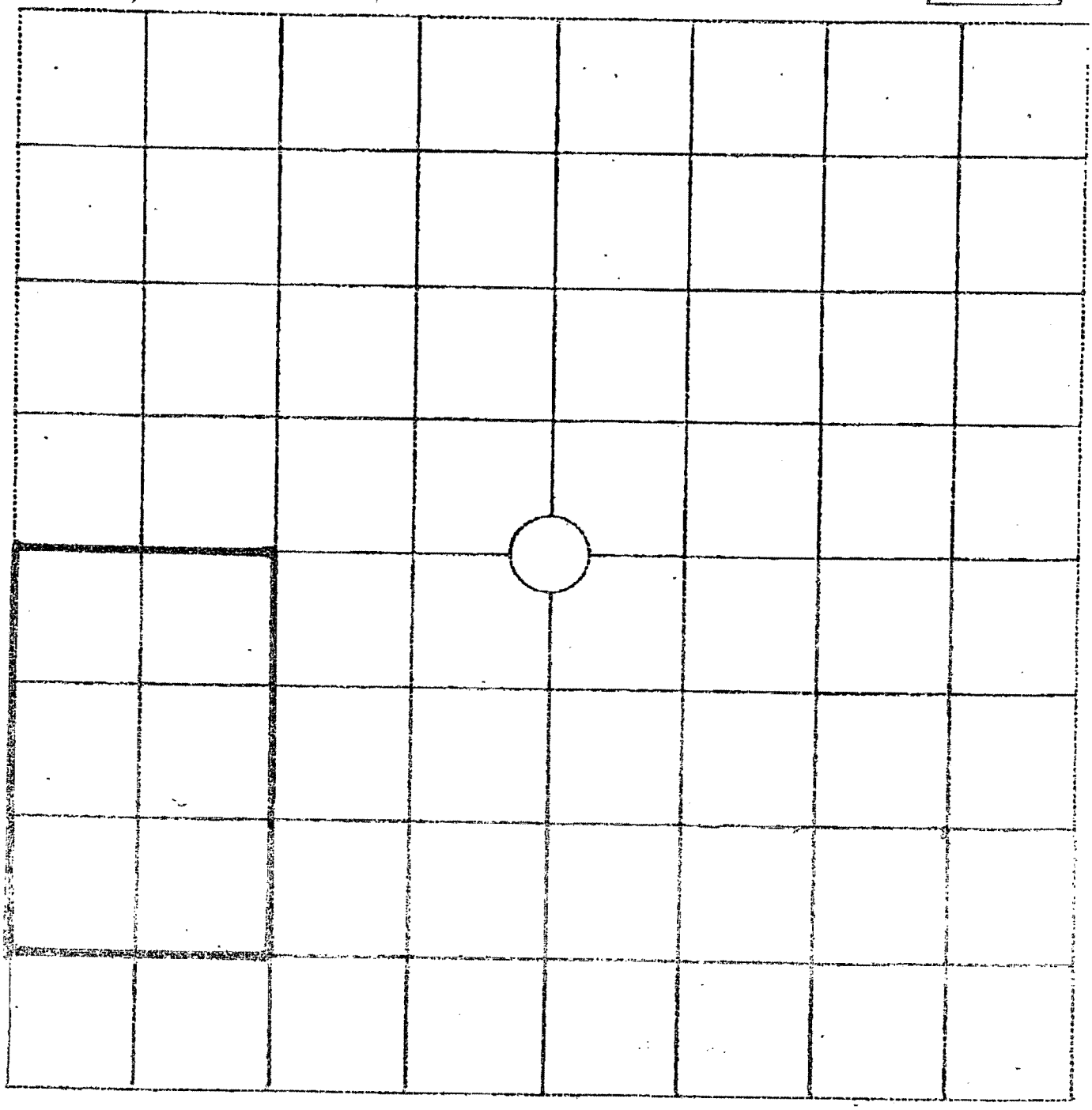
10 acre

Scale: 1" = 660'

Facility Name Samson Herr

Legal Desc. ____, ____, ____ Sec 10 T 18N R 25E Mer. ____

County ADAIR COUNTY, OK



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