Nutrient Management Plan

Section 1 - Description of Operation

Title Page
Signature Page
Location and Contact Information
Operation Description

[redacted]

Section 3 - Legal and Compliance Requirements

Section 4 - Collected Information

Aerial Photographs
Soil Maps
Topographic Maps
Soil Test & Litter Analysis

Section 5 - Nutrient Application Calculations and Analysis

Litter Production
Soil Interpretation
RUSLE Calculations
P-index Calculations

Section 6 - Field Management Recommendations

Commercial Fertilizer Recommendations
Litter Application Rates
Conclusions

[redacted]

Section 1: Description of Operation

Nutrient Management Plan

Preparation Date: March 17, 2006

For:

Jim Hale
22270 Malony Rd.
Lincoln, AR 72744
(479)848-3124

Purpose of Plan - To lawfully apply nutrients within a designated nutrient surplus area in compliance with Title XXII of the State of Arkansas' Nutrient Management laws as administered by the Arkansas Soil and Water Conservation Commission.

This Nutrient Management Plan is applicable to this operation from March 17, 2006 to March 16, 2011

Prepared by: Sarah Franklin - Water Quality Technician
Washington County Conservation Distict
Fayetteville, AR 72704
(479) 442-4160 Ext. 107

NMP Signature Page

The following individuals have assisted in the development of this NMP and certify their elements meet the nutrient planning requirements for the State of Arkansas as well as local, state, and federal standards.

Certified Nutrient Planner
Name: Sarah Franklin
Title: Water Quality Technician

Certification No.: 10591004-0007

Signature:_____ Date:_____

Conservation District Board Representative
I certify that I have reviewed this NMP for technical adequacy and that the elements of the NMP are technically compatible, reasonable, and implementable.

Name:_____
Title: Washington County Conservation District Board Representative

Signature:_____ Date:_____

Farm Owner / Manager
A representative of the Washington County Conservation District has discussed the contents of this plan with me. I understand that I am required by the law to operated my farm in compliance to the guidelines presented in this plan.

Signature:_____ Date:_____
Jim Hale

For:

Jim Hale
22270 Malony Rd.
Lincoln, AR 72744
(479)848-3124

Directions to Farm:

From Fayetteville, AR:
Take Hwy. 62 West past Lincoln. Turn left onto Hwy. 59. Go approximately 4 miles and turn right onto W.C. 417 (Malony Rd.). The farm is on the right.

Poultry House Location:

Poultry houses are located at: Latitude 35° 53' 53.87" N; Longitude 94° 29'4.59" W: in the NW 1/4 of the NE 1/4 of Section 16 in Township 14 North, Range 33 West

Field Locations:

Fields contained within this plan are located in:
Sections 9 and 16; T14N; R33W

Watershed:

All fields are contained within the Illinois River Watershed (HUC11110103). This watershed is in a designated nutrient surplus area.

Farm Operation Description

Location and Topography

The setting for this operation is in the southwest part of Washington County, AR within the Baron Fork Watershed which is part of the larger Illinois River Watershed. The topography is composed of broad upland divides separated by areas of rolling hills. The soils are a mixture of silt loam, extremely gravelly silt loam, very gravelly silt loam adn gravelly soils. The landscape varies from pastureland, hayland, and forested areas along riparian areas and hillsides.

This operation is located on the Springfield Plateau of the Ozark Highlands. This landscape is characterized by karst topography which can contain sinkholes and shallow soils over fractured bedrock. In these areas there is a greater potential to pollute surface and groundwater with surface applied nutrients.

Description of Operation

This plan includes the production, handling, and distribution of waste from 3 broiler houses. The houses have a capacity of 20, 000 birds per house. The birds are grown to 8 weeks of age with a target weight of approximately 6 lbs. On average, there will be 5.5 flocks per year for a yearly production of 330,000 birds.

Total litter production is estimated to be 495 tons per year. Clean out of litter is planned for once a year and decake after each flock. Litter is applied to lands included in this plan, and surplus is sold to landowners with a current nutrient management plan or sold to haulers that transport outside the designated nutrient surplus areas. The litter is spread on the surface of the ground on pastures and hay fields. If weather conditions are not favorable at time of cleanout, litter is stored and protected in a manner to prevent overhead water from displacing the litter from the storage area. Covered storage is available to hold stored cake or litter.

There are approximately 110.3 spreadable acres of pastureland and hayland on this farm which can potentially receive litter applications. The crops grown are bermuda grass and tall fescue in most fields.

Sensitive areas exist in or near fields contained in this plan. This farm has two ponds and Little Branch flows through the property.

Beef Cattle Production

A mixed herd of beef cattle are fed on pastureland included in this plan. There is no prescribed grazing plan for the fields. Hay is cut from hayland and/or pastures when forage production exceeds grazing demand.

Operation and Maintenance

Animal Mortality

Normal animal mortality is managed daily by collection of the dead animals and disposal of carcasses by composting incinerator. Other acceptable options for disposal of mortality include incinerating, freezing, and hauling to rendering plant.

Catastrophic animal die off will require special disposal considerations. When hauling to a rendering plant is not feasible or if disease caused the loss, the Livestock and Poultry Commission generally requires burial in a ditch that is located in suitable soil. We recommend that you bury the dead birds in Nixa very gravelly silt loam **(NaC)** soil (see Soils Map). This soil series is suited for poultry mortality disposal with slight limitations. Prior to burying any dead animals, contact the Livestock and Poultry Commission at 501-907-2400. Contact the NRCS office at 479-442-4160 extension 3, for more information.

Litter Storage

Poultry litter accumulates and is stored within the poultry houses. The storage capabilities of the poultry houses are governed primarily by company policy of the integrator and not the physical holding capacity of the poultry houses. A full house cleanout is usually required annually with a cake cleanout after every flock.

When land application of poultry waste cannot occur immediately upon the cleanout, due to weather or some other circumstances, litter should be stored so as to prevent rainwater from dispersing the litter. If more storage is needed, the litter should be piled and tarped in an elevated location away from streams, drainage ditches, and other sensitive areas.

Land Application

Lands with acceptable PI values can receive litter upon cleanout of poultry houses. Litter is surface applied using a truck mounted box spreader. Caked litter is removed from the houses and spread on fields using a decake machine.

Spreader Application

Proper calibration of spreader equipment is essential to ensure the amount of litter applied is within the required guidelines to protect water quality. The two methods of calibration that are generally used are 1) calibration based on equipment settings and operational conditions and 2) calibration based on tons per load and number of loads applied. Applicators should be certified by a state recognized program or under the direct supervision of a certified applicator.

2006 Annual Litter Plan

For: Jim Hale

Total Litter Production and Application Recommendations						
Application Date	**Litter Source**	**Field ID**	**Farm / Location**	**Acres**	**Tons/ acre**	**Total Tons/ field**
March - October	Hale	1	Jim Hale	5.1	3	15.3
March - October	Hale	2	Jim Hale	12.9	3	38.7
March - October	Hale	3	Jim Hale	6.9	2	13.8
March - October	Hale	4	Jim Hale	5.9	2	11.8
March - October	Hale	5	Jim Hale	3.1	2	6.2
March - October	Hale	6	Jim Hale	16.2	3	48.6
March - October	Hale	7	Jim Hale	8.3	2	16.6
March - October	Hale	8	Jim Hale	19.5	2	39
March - October	Hale	9	Jim Hale	15.7	3	47.1
March - October	Hale	10	Jim Hale	6.3	2	12.6
March - October	Hale	11	Jim Hale	10.4	2	20.8

Estimated tons of litter produced	495.0
Tons of litter applied	270.5
Estimated tons to be exported off farm	224.5

Notes:

1) Litter from stacking shed is not included in this plan. Therefore, decake litter should be included in the litter that will be exported off farm unless there is adequate acreage for land application in this farm.

2) Litter application rate was determined by the 2001 Arkansas Phosphorous Index required by Arkansas Title XXII.

3) Litter should be applied as evenly as possible across the fields and can only be done by certified nutrient applicator as required by Title XXII.

Section 3: Legal and Compliance Requirements

This nutrient management plan is for a poultry operation located in a Nutrient Surplus Area designated by the 83rd Arkansas General Assembly ACT 1061 of 2003. Therefore this operation is subject to all the guidelines of Arkansas Title XXII. This document is a nutrient management plan written by a planner certified by the State of Arkansas through the Arkansas Soil and Water Conservation Commission and therefore fulfills the requirements of a nutrient management plan for land within designated nutrient surplus areas. The contents of this document are legally binding and must be implemented through farm practices and procedures.

Waste Utilization

Waste will be spread by any method that will result in the uniform application of material at specified rates according to Natural Resources Conservation Service (NRCS) Standard 633. Non-application buffer areas are marked on the litter application maps included in this plan. See section 4 of this nutrient management plan.

Nutrient Management

Apply fertilizer, litter, and other animal wastes according to the nutrient budget in this plan. Use soil test results to monitor fertility rates and adjust application of nutrients to coincide with those test results. Apply nutrients when weather and forage conditions are conducive for application. All nutrient applications should meet requirements set by NRCS standard 590.

Soil and Litter Sampling

Several soil cores will be taken from each field and combined into one sample for each individual field. This process will be repeated once every five years when the nutrient management plan is revised. As required by Title 22, one litter sample per farm will be taken once every five years.

Record Keeping

Arkansas Title 22 requires that records be kept of the quantity of poultry litter, manure, or other nutrient sources containing nitrogen and phosphorous. Records must be kept for a minimum of 5 years. Forms are provided in Section 7 to maintain this information.

Section 4: Collection Information

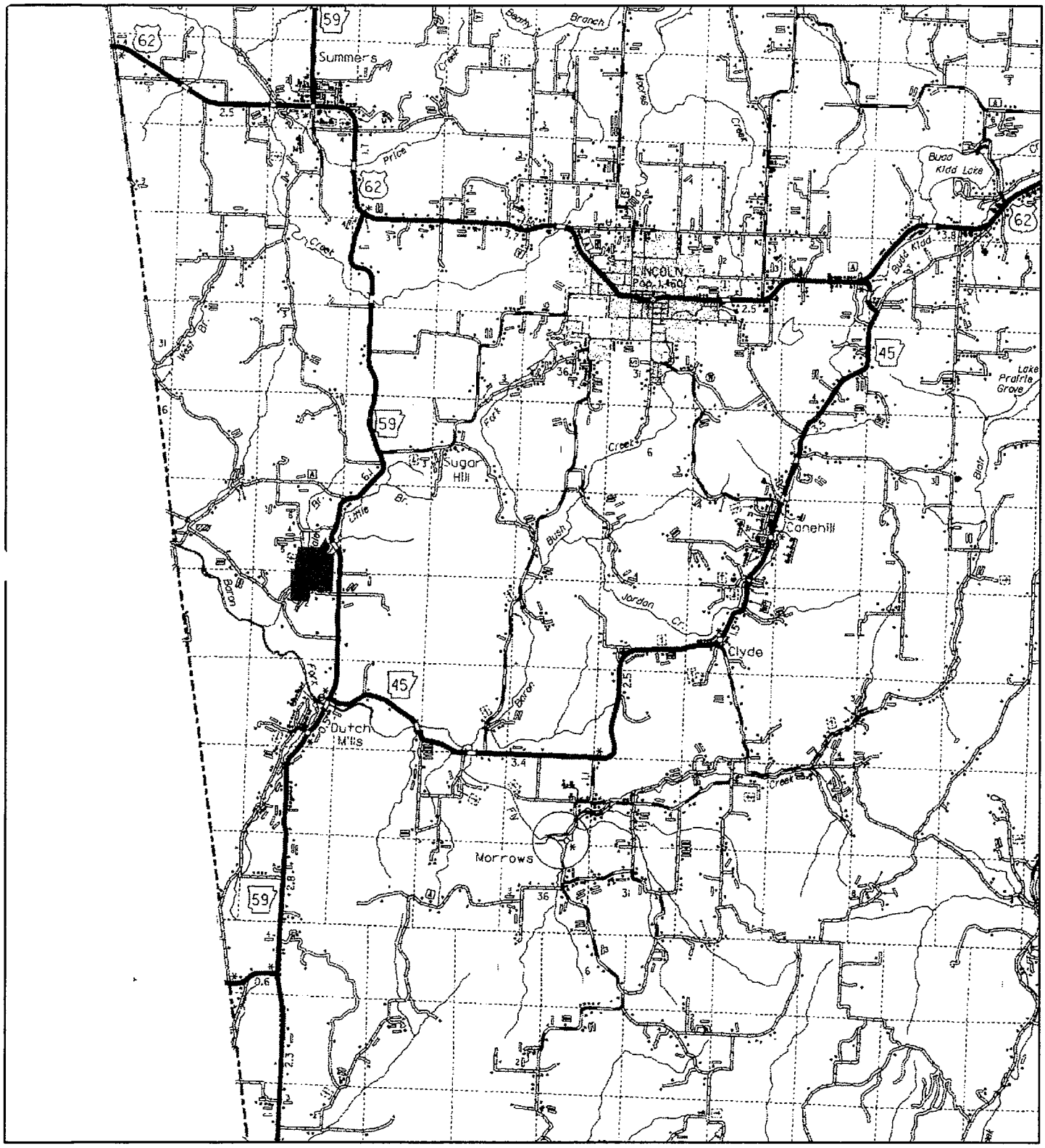
1) Aerial Photographs
2) Soil maps
3) Topographic Maps
4) Soil Test Results
5) Litter Analysis Results

Vicinity Map

Date: 11/22/2005

Customer(s): JIM G HALE
District: Washington County

Field Office: Fayetteville Service Center
Agency: NRCS-WCCD
Assisted By: Andrew Parrish



Legend

Consplan

Image: AHTD_s_ar143.tif

5,000 0 5,000 10,000 15,000 20,000 Feet

N

Conservation Plan Map

Date: 11/22/2005

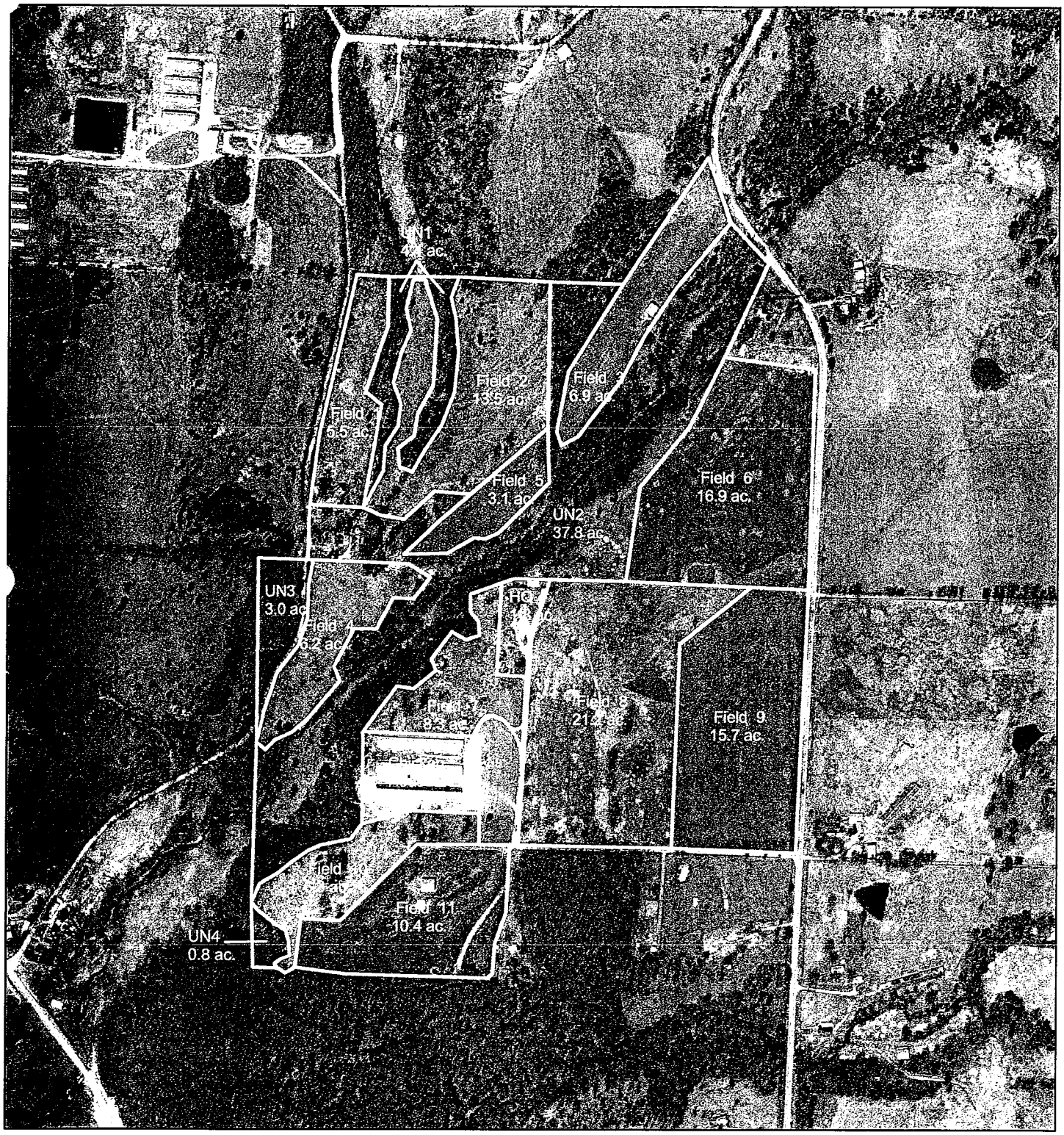
Customer(s): JIM G HALE

District: Washington County

Field Office: Fayetteville Service Center

Agency: NRCS-WCCD

Assisted By: Andrew Parrish



Legend

Consplan

Image: AHTD_s_ar143.tif

400 0 400 800 1,200 1,600 Feet

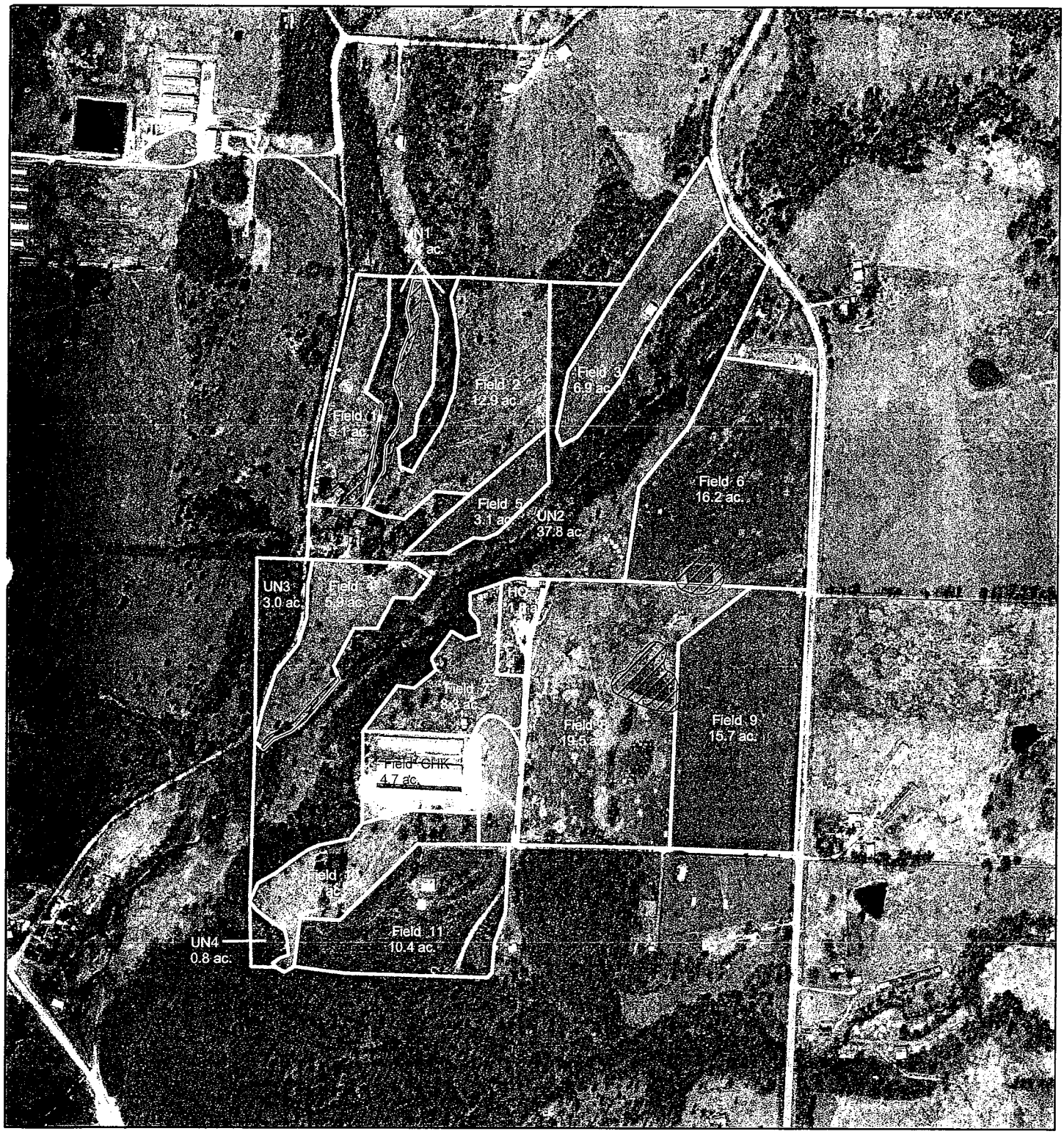
N

Buffer Map

Date: 11/22/2005

Customer(s): JIM G HALE
District: Washington County

Field Office: Fayetteville Service Center
Agency: NRCS-WCCD
Assisted By: Andrew Parrish



Legend

Consplan
Buffers.shp
Image: AHTD_s_ar143.tif

400 0 400 800 1,200 1,600 Feet

N

Topographic Map

Date: 11/22/2005

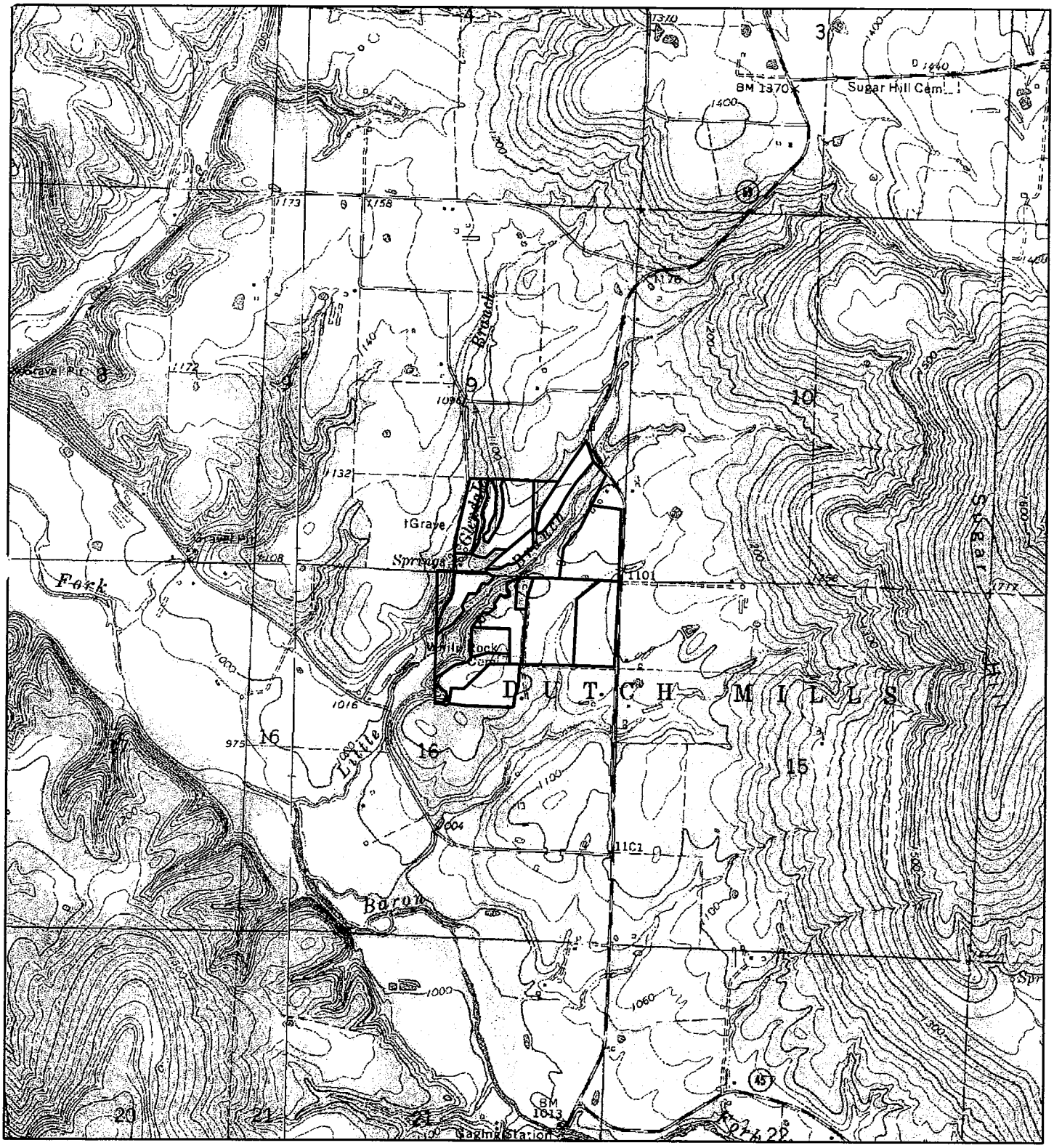
Customer(s): JIM G HALE

District: Washington County

Field Office: Fayetteville Service Center

Agency: NRCS-WCCD

Assisted By: Andrew Parrish



Legend

Consplan

Image: AHTD_s_ar143.tif

1,200 0 1,200 2,400 3,600 4,800 Feet

N

Soils Map

Date: 11/22/2005

Customer(s): JIM G HALE
District: Washington County

Field Office: Fayetteville Service Center
Agency: NRCS-WCCD
Assisted By: Andrew Parrish

Legend

- Consplan
- Clarksville extremely gravelly silt loam, 12 to 60 percent slopes
- Elsah gravelly soils (ceda)
- Guin very gravelly silt loam, 3 to 8 percent slopes (clarksville)
- Nixa very gravelly silt loam, 3 to 8 percent slopes
- Pickwick silt loam, 1 to 3 percent slopes
- Pickwick silt loam, 3 to 8 percent slopes, eroded
- Razort loam

Image: AHTD_s_ar143.tif

1,000 0 1,000 2,000 3,000 4,000 Feet

N

Soils Inventory Report

Tue Nov 22 12:22:45 CST 2005

JIM G HALE

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent	
206	3	ClG	Clarksville extremely gravelly silt loam, 12 to 60 percent slopes	1.3	19%	7
206	3	Rk	Razort loam	5.5	81%	5
			Total:	6.8		
206	6	PsC2	Pickwick silt loam, 3 to 8 percent slopes, eroded	7.6	45%	2
206	6	PsB	Pickwick silt loam, 1 to 3 percent slopes	9.3	55%	2
			Total:	16.9		
206	UN2	GuC	Guin very gravelly silt loam, 3 to 8 percent slopes (clarksville)	0.2	1%	
206	UN2	NaC	Nixa very gravelly silt loam, 3 to 8 percent slopes	2.1	6%	
206	UN2	Eg	Elsah gravelly soils (ceda)	2.7	7%	
206	UN2	PsC2	Pickwick silt loam, 3 to 8 percent slopes, eroded	3.9	10%	
206	UN2	Rk	Razort loam	4.1	11%	
206	UN2	ClG	Clarksville extremely gravelly silt loam, 12 to 60 percent slopes	24.7	66%	
			Total:	37.7		
207	1	GuC	Guin very gravelly silt loam, 3 to 8 percent slopes (clarksville)	2	36%	7
207	1	Rk	Razort loam	3.5	64%	7
			Total:	5.5		
207	2	Rk	Razort loam	2.9	22%	10
207	2	GuC	Guin very gravelly silt loam, 3 to 8 percent slopes (clarksville)	3.5	26%	6
207	2	ClG	Clarksville extremely gravelly silt loam, 12 to 60 percent slopes	7	52%	7
			Total:	13.4		
207	5	ClG	Clarksville extremely gravelly silt loam, 12 to 60 percent slopes	0.7	23%	5
207	5	Rk	Razort loam	2.4	77%	5
			Total:	3.1		
207	UN1	GuC	Guin very gravelly silt loam, 3 to 8 percent slopes (clarksville)	0	0%	
207	UN1	ClG	Clarksville extremely gravelly silt loam, 12 to 60 percent slopes	1.7	39%	
207	UN1	Rk	Razort loam	2.7	61%	

			Total:	4.4		
4265	10	CIG	Clarksville extremely gravelly silt loam, 12 to 60 percent slopes	1	16%	8
4265	10	NaC	Nixa very gravelly silt loam, 3 to 8 percent slopes	5.3	84%	9
			Total:	6.3		
4265	11	CIG	Clarksville extremely gravelly silt loam, 12 to 60 percent slopes	0	0%	
4265	11	NaC	Nixa very gravelly silt loam, 3 to 8 percent slopes	10.4	100%	5
			Total:	10.4		
4266	4	CIG	Clarksville extremely gravelly silt loam, 12 to 60 percent slopes	2.4	39%	15
4266	4	Rk	Razort loam	3.8	61%	7
			Total:	6.2		
4266	7	CIG	Clarksville extremely gravelly silt loam, 12 to 60 percent slopes	0.5	6%	16
4266	7	PsC2	Pickwick silt loam, 3 to 8 percent slopes, eroded	2.2	27%	5
4266	7	NaC	Nixa very gravelly silt loam, 3 to 8 percent slopes	5.6	67%	6
			Total:	8.3		
4266	8	CIG	Clarksville extremely gravelly silt loam, 12 to 60 percent slopes	0.2	1%	7
4266	8	PsB	Pickwick silt loam, 1 to 3 percent slopes	0.4	2%	3
4266	8	NaC	Nixa very gravelly silt loam, 3 to 8 percent slopes	2.3	11%	6
4266	8	PsC2	Pickwick silt loam, 3 to 8 percent slopes, eroded	18.2	86%	5
			Total:	21.1		
4266	9	PsC2	Pickwick silt loam, 3 to 8 percent slopes, eroded	15.7	100%	3
			Total:	15.7		
4266	CHK	PsC2	Pickwick silt loam, 3 to 8 percent slopes, eroded	0	0%	
4266	CHK	CIG	Clarksville extremely gravelly silt loam, 12 to 60 percent slopes	0.2	4%	
4266	CHK	NaC	Nixa very gravelly silt loam, 3 to 8 percent slopes	4.5	96%	
			Total:	4.7		
4266	HQ	NaC	Nixa very gravelly silt loam, 3 to 8 percent slopes	0.4	22%	
4266	HQ	PsC2	Pickwick silt loam, 3 to 8 percent slopes, eroded	1.4	78%	
			Total:	1.8		
4266	UN3	Rk	Razort loam	0.2	7%	
4266	UN3	CIG	Clarksville extremely gravelly silt loam, 12 to 60 percent slopes	2.7	93%	
			Total:	2.9		
4266	UN4	NaC	Nixa very gravelly silt loam, 3 to 8 percent slopes	0.1	11%	
4266	UN4	CIG	Clarksville extremely gravelly silt loam, 12 to 60 percent slopes	0.8	89%	
			Total:	0.9		

Lab No:	84891
Sample No.	770683
County:	Washington
Date Processed:	11/14/2005
Soil Association:	4
Acres in Field:	6
Soil Texture:	Sandy/Silt Loam
Irrigation:	
Field ID:	1

UNIVERSITY OF ARKANSAS

Cooperative Extension Service

Soil Analysis Report

Soil Testing And Research Laboratory
Marianna, Arkansas 72360
http://www.uark.edu/depts/soiltest

JIM HALE
22270 MALONY RD
LINCOLN AR 72744
Client ID: **8483124**

Years since in timber:	
tons/A of Lime Applied:	
Years ago applied:	9
Forage Production:	Medium

5.5	pH	
	salinity-EC	
	OM	
11	CEC	
58.7	Base sat	
8.1	K sat	
12.5	Mg sat	
0.8	Na sat	

379	P	
690	K	
1626	Ca	
327	Mg	
42	Na	
235	Fe	
Last Crop	FESCUE ON BERMUDAGRASS - MAINTENANCE	323

63	NO3-N	
45	SO4-S	
201	Mn	
11.1	Cu	
23.4	Zn	
0.8	B	

Crop 1	323	FESCUE ON BERMUDAGRASS - MAINTENANCE						
Recommendation	**60**	lb N/A	**0**	lb P2O5/A	**0**	lb K2O/A	**2.0**	ton Lime/A

102700 To favor cool season grasses, apply recommended N-P-K fertilizer in fall; to favor warm season grasses, apply recommended N-P-K fertilizer in spring.

102800 Topdress additional 50-60 lbs. N/A in early spring for cool season grasses and/or in summer for warm season grasses.

If you need more information on fertilizer grades and rates ask your County Agent for Note P004.

Enclosure Note: P002

BIC

Crop 2								
Recommendation	**0**	lb N/A	**0**	lb P2O5/A	**0**	lb K2O/A	**0.0**	ton Lime/A

Crop 3								
Recommendation	**0**	lb N/A	**0**	lb P2O5/A	**0**	lb K2O/A	**0.0**	ton Lime/A

Lab No:	84892
Sample No.	770684
County:	Washington
Date Processed:	11/14/2005
Soil Association:	4
Acres in Field:	13
Soil Texture:	Sandy/Silt Loam
Irrigation:	
Field ID:	2

UNIVERSITY OF ARKANSAS

Cooperative Extension Service

Soil Analysis Report

Soil Testing And Research Laboratory
Marianna, Arkansas 72360
http://www.uark.edu/depts/soiltest

JIM HALE
22270 MALONY RD
LINCOLN AR 72744
Client ID: **8483124**

Years since in timber:	
tons/A of Lime Applied:	
Years ago applied:	9
Forage Production:	Medium

5.5	pH	
	salinity-EC	
	OM	
11	CEC	
60.6	Base sat	
4.8	K sat	
10.7	Mg sat	
1.0	Na sat	

184	P	
427	K	
2011	Ca	
292	Mg	
55	Na	
168	Fe	

87	NO3-N	
42	SO4-S	
345	Mn	
7.6	Cu	
14.7	Zn	
1.1	B	

Last Crop	FESCUE ON BERMUDAGRASS - MAINTENANCE	323

Crop 1	323	FESCUE ON BERMUDAGRASS - MAINTENANCE						
Recommendation	60	lb N/A	0	lb P2O5/A	0	lb K2O/A	2.0	ton Lime/A

102700 To favor cool season grasses, apply recommended N-P-K fertilizer in fall; to favor warm season grasses, apply recommended N-P-K fertilizer in spring.

102800 Topdress additional 50-60 lbs. N/A in early spring for cool season grasses and/or in summer for warm season grasses.

If you need more information on fertilizer grades and rates ask your County Agent for Note P004.

Enclosure Note: P002

BK

Crop 2								
Recommendation	0	lb N/A	0	lb P2O5/A	0	lb K2O/A	0.0	ton Lime/A

Crop 3								
Recommendation	0	lb N/A	0	lb P2O5/A	0	lb K2O/A	0.0	ton Lime/A

Lab No:	84893
Sample No.	770685
County:	Washington
Date Processed:	11/14/2005
Soil Association:	4
Acres in Field:	7
Soil Texture:	Sandy/Silt Loam
Irrigation:	
Field ID:	3

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Cooperative Extension Service

Soil Analysis Report

Soil Testing And Research Laboratory
Marianna, Arkansas 72360
http://www.uark.edu/depts/soiltest

JIM HALE
22270 MALONY RD
LINCOLN AR 72744
Client ID: 8483124

Years since in timber:	
tons/A of Lime Applied:	
Years ago applied:	9
Forage Production:	Medium

6.0	pH	
	salinity-EC	
	OM	
13	CEC	
72.7	Base sat	
2.7	K sat	
12.6	Mg sat	
0.8	Na sat	

473	P	
274	K	
2899	Ca	
388	Mg	
49	Na	
216	Fe	

35	NO3-N	
40	SO4-S	
191	Mn	
19.2	Cu	
36.2	Zn	
1.3	B	

Last Crop	FESCUE ON BERMUDAGRASS - MAINTENANCE	323

Crop 1	323	FESCUE ON BERMUDAGRASS - MAINTENANCE						
Recommendation	60	lb N/A	0	lb P2O5/A	60	lb K2O/A	1.5	ton Lime/A

102700 To favor cool season grasses, apply recommended N-P-K fertilizer in fall; to favor warm season grasses, apply recommended N-P-K fertilizer in spring.

102800 Topdress additional 50-60 lbs. N/A in early spring for cool season grasses and/or in summer for warm season grasses.

103000 Apply additional 60 lbs. potash/A at beginning of next growing season.

If you need more information on fertilizer grades and rates ask your County Agent for Note P004.

Enclosure Note: P002

BC

Crop 2								
Recommendation	0	lb N/A	0	lb P2O5/A	0	lb K2O/A	0.0	ton Lime/A

Crop 3								
Recommendation	0	lb N/A	0	lb P2O5/A	0	lb K2O/A	0.0	ton Lime/A

Lab No:	84894
Sample No.	770686
County:	Washington
Date Processed:	11/14/2005
Soil Association:	4
Acres in Field:	5
Soil Texture:	Sandy/Silt Loam
Irrigation:	
Field ID:	4

UNIVERSITY OF ARKANSAS

Cooperative Extension Service

Soil Analysis Report

Soil Testing And Research Laboratory
Marianna, Arkansas 72360
http://www.uark.edu/depts/soiltest

JIM HALE
22270 MALONY RD
LINCOLN AR 72744
Client ID: **8483124**

Years since in timber:	
tons/A of Lime Applied:	
Years ago applied:	9
Forage Production:	Medium

5.8	pH	
	salinity-EC	
	OM	
14	CEC	
68.7	Base sat	
7.8	K sat	
14.7	Mg sat	
0.5	Na sat	

461	P	
879	K	
2617	Ca	
507	Mg	
36	Na	
169	Fe	
Last Crop	**FESCUE ON BERMUDAGRASS - MAINTENANCE**	323

63	NO3-N	
51	SO4-S	
301	Mn	
11.5	Cu	
30.1	Zn	
1.5	B	

Crop 1	323	**FESCUE ON BERMUDAGRASS - MAINTENANCE**						
Recommendation	**60**	lb N/A	**0**	lb P2O5/A	**0**	lb K2O/A	**1.5**	ton Lime/A

102700 To favor cool season grasses, apply recommended N-P-K fertilizer in fall; to favor warm season grasses, apply recommended N-P-K fertilizer in spring.

102800 Topdress additional 50-60 lbs. N/A in early spring for cool season grasses and/or in summer for warm season grasses.

If you need more information on fertilizer grades and rates ask your County Agent for Note P004.

Enclosure Note: P002

B/C

Crop 2								
Recommendation	**0**	lb N/A	**0**	lb P2O5/A	**0**	lb K2O/A	**0.0**	ton Lime/A

Crop 3								
Recommendation	**0**	lb N/A	**0**	lb P2O5/A	**0**	lb K2O/A	**0.0**	ton Lime/A

Lab No:	84895
Sample No.	770687
County:	Washington
Date Processed:	11/14/2005
Soil Association:	4
Acres in Field:	5
Soil Texture:	Sandy/Silt Loam
Irrigation:	
Field ID:	5

UNIVERSITY OF ARKANSAS

Cooperative Extension Service

Soil Analysis Report

Soil Testing And Research Laboratory
Marianna, Arkansas 72360
http://www.uark.edu/depts/soiltest

JIM HALE
22270 MALONY RD
LINCOLN AR 72744
Client ID: **8483124**

Years since in timber:	
tons/A of Lime Applied:	
Years ago applied:	9
Forage Production:	Medium

5.1	pH	
	salinity-EC	
	OM	
12	CEC	
55.5	Base sat	
3.6	K sat	
9.3	Mg sat	
0.9	Na sat	

487	P	
348	K	
2056	Ca	
276	Mg	
53	Na	
201	Fe	

96	NO3-N	
48	SO4-S	
317	Mn	
19.5	Cu	
26.6	Zn	
0.9	B	

Last Crop	FESCUE ON BERMUDAGRASS - MAINTENANCE	323

Crop 1	323	**FESCUE ON BERMUDAGRASS - MAINTENANCE**						
Recommendation	**60**	lb N/A	**0**	lb P2O5/A	**0**	lb K2O/A	**2.5**	ton Lime/A

102700 To favor cool season grasses, apply recommended N-P-K fertilizer in fall; to favor warm season grasses, apply recommended N-P-K fertilizer in spring.

102800 Topdress additional 50-60 lbs. N/A in early spring for cool season grasses and/or in summer for warm season grasses.

If you need more information on fertilizer grades and rates ask your County Agent for Note P004.

Enclosure Note: P002

BK

Crop 2								
Recommendation	**0**	lb N/A	**0**	lb P2O5/A	**0**	lb K2O/A	**0.0**	ton Lime/A

Crop 3								
Recommendation	**0**	lb N/A	**0**	lb P2O5/A	**0**	lb K2O/A	**0.0**	ton Lime/A

Lab No:	84896
Sample No.	770688
County:	Washington
Date Processed:	11/14/2005
Soil Association:	4
Acres in Field:	15
Soil Texture:	Sandy/Silt Loam
Irrigation:	
Field ID:	6

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Soil Analysis Report

Soil Testing And Research Laboratory
Marianna, Arkansas 72360
http://www.uark.edu/depts/soiltest

JIM HALE
22270 MALONY RD
LINCOLN AR 72744
Client ID: 8483124

Years since in timber:	
tons/A of Lime Applied:	
Years ago applied:	9
Forage Production:	Medium

5.7	pH	
	salinity-EC	
	OM	
14	CEC	
67.6	Base sat	
6.4	K sat	
14.4	Mg sat	
1.6	Na sat	

671	P	
689	K	
2515	Ca	
480	Mg	
100	Na	
232	Fe	

57	NO3-N	
76	SO4-S	
233	Mn	
13.4	Cu	
34.5	Zn	
1.4	B	

Last Crop	FESCUE ON BERMUDAGRASS - MAINTENANCE	323

Crop 1	323	FESCUE ON BERMUDAGRASS - MAINTENANCE							
Recommendation	60	lb N/A	0	lb P2O5/A	0	lb K2O/A	1.5	ton Lime/A	

102700 To favor cool season grasses, apply recommended N-P-K fertilizer in fall; to favor warm season grasses, apply recommended N-P-K fertilizer in spring.

102800 Topdress additional 50-60 lbs. N/A in early spring for cool season grasses and/or in summer for warm season grasses.

If you need more information on fertilizer grades and rates ask your County Agent for Note P004.

Enclosure Note: P002

B/C

Crop 2									
Recommendation	0	lb N/A	0	lb P2O5/A	0	lb K2O/A	0.0	ton Lime/A	

Crop 3									
Recommendation	0	lb N/A	0	lb P2O5/A	0	lb K2O/A	0.0	ton Lime/A	

Lab No:	84937
Sample No.	770696
County:	Washington
Date Processed:	11/14/2005
Soil Association:	4
Acres in Field:	10
Soil Texture:	Sandy/Silt Loam
Irrigation:	
Field ID:	7

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Cooperative Extension Service

Soil Analysis Report

Soil Testing And Research Laboratory
Marianna, Arkansas 72360
http://www.uark.edu/depts/soiltest

JIM HALE
22270 MALONY RD
LINCOLN AR 72744
Client ID: **8483124**

Years since in timber:	
tons/A of Lime Applied:	
Years ago applied:	9
Forage Production:	Medium

5.1	pH	
	salinity-EC	
	OM	
12	CEC	
52.7	Base sat	
5.7	K sat	
10.0	Mg sat	
1.1	Na sat	

223	P	
515	K	
1673	Ca	
278	Mg	
58	Na	
140	Fe	

63	NO3-N	
52	SO4-S	
177	Mn	
7.2	Cu	
306.7	Zn	
0.8	B	

Last Crop	FESCUE ON BERMUDAGRASS - MAINTENANCE	323

Crop 1	323	FESCUE ON BERMUDAGRASS - MAINTENANCE							
Recommendation	60	lb N/A	0	lb P2O5/A	0	lb K2O/A	2.5	ton Lime/A	

102700 To favor cool season grasses, apply recommended N-P-K fertilizer in fall; to favor warm season grasses, apply recommended N-P-K fertilizer in spring.

102800 Topdress additional 50-60 lbs. N/A in early spring for cool season grasses and/or in summer for warm season grasses.

If you need more information on fertilizer grades and rates ask your County Agent for Note P004.

Enclosure Note: P002

BJC

Crop 2									
Recommendation	0	lb N/A	0	lb P2O5/A	0	lb K2O/A	0.0	ton Lime/A	

Crop 3									
Recommendation	0	lb N/A	0	lb P2O5/A	0	lb K2O/A	0.0	ton Lime/A	

Lab No:	84897
Sample No.	770689
County:	Washington
Date Processed:	11/14/2005
Soil Association:	4
Acres in Field:	22
Soil Texture:	Sandy/Silt Loam
Irrigation:	
Field ID:	8

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Soil Analysis Report

Soil Testing And Research Laboratory
Marianna, Arkansas 72360
http://www.uark.edu/depts/soiltest

JIM HALE
22270 MALONY RD
LINCOLN AR 72744
Client ID: **8483124**

Years since in timber:	
tons/A of Lime Applied:	
Years ago applied:	9
Forage Production:	Medium

6.0	pH	
	salinity-EC	
	OM	
11	CEC	
72.5	Base sat	
13.3	K sat	
14.8	Mg sat	
1.2	Na sat	

546	P	
1135	K	
1879	Ca	
388	Mg	
61	Na	
223	Fe	

35	NO3-N	
52	SO4-S	
232	Mn	
12.6	Cu	
31.3	Zn	
1.5	B	

Last Crop	FESCUE ON BERMUDAGRASS - MAINTENANCE	323

Crop 1	323	FESCUE ON BERMUDAGRASS - MAINTENANCE							
Recommendation	60	lb N/A	0	lb P2O5/A	0	lb K2O/A	1.5	ton Lime/A	

102700 To favor cool season grasses, apply recommended N-P-K fertilizer in fall; to favor warm season grasses, apply recommended N-P-K fertilizer in spring.

102800 Topdress additional 50-60 lbs. N/A in early spring for cool season grasses and/or in summer for warm season grasses.

If you need more information on fertilizer grades and rates ask your County Agent for Note P004.

Enclosure Note: P002

BK

Crop 2									
Recommendation	0	lb N/A	0	lb P2O5/A	0	lb K2O/A	0.0	ton Lime/A	

Crop 3									
Recommendation	0	lb N/A	0	lb P2O5/A	0	lb K2O/A	0.0	ton Lime/A	

Lab No:	84898
Sample No.	770690
County:	Washington
Date Processed:	11/14/2005
Soil Association:	4
Acres in Field:	17
Soil Texture:	Sandy/Silt Loam
Irrigation:	
Field ID:	9

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Soil Analysis Report

Soil Testing And Research Laboratory
Marianna, Arkansas 72360
http://www.uark.edu/depts/soiltest

JIM HALE
22270 MALONY RD
LINCOLN AR 72744
Client ID: 8483124

Years since in timber:	
tons/A of Lime Applied:	
Years ago applied:	9
Forage Production:	Medium

5.9	pH	
	salinity-EC	
	OM	
12	CEC	
70.5	Base sat	
3.9	K sat	
14.1	Mg sat	
1.0	Na sat	

632	P	
360	K	
2449	Ca	
402	Mg	
54	Na	
234	Fe	

8	NO3-N	
41	SO4-S	
202	Mn	
18.6	Cu	
38.9	Zn	
1.3	B	

Last Crop	FESCUE ON BERMUDAGRASS - MAINTENANCE	323

Crop 1	323	FESCUE ON BERMUDAGRASS - MAINTENANCE						
Recommendation	60	lb N/A	0	lb P2O5/A	0	lb K2O/A	1.5	ton Lime/A

102700 To favor cool season grasses, apply recommended N-P-K fertilizer in fall; to favor warm season grasses, apply recommended N-P-K fertilizer in spring.

102800 Topdress additional 50-60 lbs. N/A in early spring for cool season grasses and/or in summer for warm season grasses.

If you need more information on fertilizer grades and rates ask your County Agent for Note P004.

Enclosure Note: P002

B/C

Crop 2								
Recommendation	0	lb N/A	0	lb P2O5/A	0	lb K2O/A	0.0	ton Lime/A

Crop 3								
Recommendation	0	lb N/A	0	lb P2O5/A	0	lb K2O/A	0.0	ton Lime/A

Lab No:	84938
Sample No.	770697
County:	Washington
Date Processed:	11/14/2005
Soil Association:	4
Acres in Field:	7
Soil Texture:	Sandy/Silt Loam
Irrigation:	
Field ID:	10

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Soil Analysis Report

Soil Testing And Research Laboratory
Marianna, Arkansas 72360
http://www.uark.edu/depts/soiltest

JIM HALE
22270 MALONY RD
LINCOLN AR 72744
Client ID: 8483124

Years since in timber:	
tons/A of Lime Applied:	
Years ago applied:	9
Forage Production:	Medium

5.4	pH	
	salinity-EC	
	OM	
12	CEC	
61.5	Base sat	
7.3	K sat	
11.9	Mg sat	
1.0	Na sat	

375	P	
667	K	
1926	Ca	
334	Mg	
55	Na	
271	Fe	

23	NO3-N	
50	SO4-S	
99	Mn	
13.4	Cu	
35.2	Zn	
1.2	B	

Last Crop	FESCUE ON BERMUDAGRASS - MAINTENANCE	323

Crop 1	323	FESCUE ON BERMUDAGRASS - MAINTENANCE						
Recommendation	60	lb N/A	0	lb P2O5/A	0	lb K2O/A	2.0	ton Lime/A

102700 To favor cool season grasses, apply recommended N-P-K fertilizer in fall; to favor warm season grasses, apply recommended N-P-K fertilizer in spring.

102800 Topdress additional 50-60 lbs. N/A in early spring for cool season grasses and/or in summer for warm season grasses.

If you need more information on fertilizer grades and rates ask your County Agent for Note P004.

Enclosure Note: P002

BK

Crop 2								
Recommendation	0	lb N/A	0	lb P2O5/A	0	lb K2O/A	0.0	ton Lime/A

Crop 3								
Recommendation	0	lb N/A	0	lb P2O5/A	0	lb K2O/A	0.0	ton Lime/A

Lab No:	84939
Sample No.	770698
County:	Washington
Date Processed:	11/14/2005
Soil Association:	4
Acres in Field:	10
Soil Texture:	Sandy/Silt Loam
Irrigation:	
Field ID:	11

UNIVERSITY OF ARKANSAS

Cooperative Extension Service

Soil Analysis Report

Soil Testing And Research Laboratory
Marianna, Arkansas 72360
http://www.uark.edu/depts/soiltest

JIM HALE
22270 MALONY RD
LINCOLN AR 72744
Client ID: **8483124**

Years since in timber:	
tons/A of Lime Applied:	
Years ago applied:	9
Forage Production:	Medium

5.9	pH	
	salinity-EC	
	OM	
12	CEC	
70.1	Base sat	
3.3	K sat	
10.6	Mg sat	
2.1	Na sat	

617	P	
299	K	
2529	Ca	
298	Mg	
112	Na	
258	Fe	

12	NO3-N	
42	SO4-S	
97	Mn	
17.8	Cu	
34.0	Zn	
1.2	B	

Last Crop	FESCUE ON BERMUDAGRASS - MAINTENANCE	323

Crop 1	323	FESCUE ON BERMUDAGRASS - MAINTENANCE							
Recommendation	60	lb N/A	0	lb P2O5/A	60	lb K2O/A	1.5	ton Lime/A

102700 To favor cool season grasses, apply recommended N-P-K fertilizer in fall; to favor warm season grasses, apply recommended N-P-K fertilizer in spring.

102800 Topdress additional 50-60 lbs. N/A in early spring for cool season grasses and/or in summer for warm season grasses.

103000 Apply additional 60 lbs. potash/A at beginning of next growing season.

If you need more information on fertilizer grades and rates ask your County Agent for Note P004.

Enclosure Note: P002

BK

Crop 2								
Recommendation	0	lb N/A	0	lb P2O5/A	0	lb K2O/A	0.0	ton Lime/A

Crop 3								
Recommendation	0	lb N/A	0	lb P2O5/A	0	lb K2O/A	0.0	ton Lime/A

Non-Technical Descriptions

Soil Survey Area: 143 WASHINGTON COUNTY, ARKANSAS

Map unit: *Cr* Cleora fine sandy loam

Description Category: **AGR 2. Agronomic**

This soil is well suited to pasture and hayland, and cultivated crops. Occasional flooding during the late fall, winter, and early spring is a moderate hazard. Suitable crops include corn, soybeans, grain sorghum, and truck crops. Adapted pasture plants include bermudagrass, bahiagrass, tall fescue and white clover.

Description Category: **WQL 3. Water Quality**

These soils have a moderate surface runoff potential, due to occasional flooding, and a high leaching index. Nutrient movement to surface and ground waters is a hazard on these soils. Nutrient management practices that minimize the movement of soluble nutrients below the root zone and exclude the application of nutrients during periods when flood risk is high should be planned on these soils. Soluble forms of nutrients should be avoided if other forms of nutrients are available.

Map unit: *Eg* Elsah gravelly soils (ceda)

Description Category: **AGR 2. Agronomic**

This soil is poorly suited for cultivated crops and moderately suited for pasture. Flooding is a moderate hazard during the winter and spring. Droughtiness is also a moderate limitation due to high content of coarse fragments. Adapted pasture plants include common and improved bermudagrass and tall fescue.

Description Category: **WQL 3. Water Quality**

These soils have a severe surface runoff potential, due to common flooding, and a high leaching index. Nutrient movement to surface and ground waters is a hazard on these soils. Nutrient management practices that minimize the movement of soluble nutrients below the root zone and exclude the application of nutrients during periods when flood risk is high should be planned on these soils. Soluble forms of nutrients should be avoided if other forms of nutrients are available.

Map unit: *GuC* Guin cherty silt loam, 3 to 8 percent slopes (clarksville)

Description Category: **AGR 2. Agronomic**

These soils are moderately suited for pasture and poorly suited for cultivated crops. Slope and high content of chert fragments on the surface are the main restrictions. Erosion is also a severe hazard in areas without adequate cover. Suitable pasture plants include tall fescue, common and improved bermudagrass, and native grasses. Good management practices include controlled grazing and proper stocking. Conservation practices need to be intensified as slope length and gradient increase.

Description Category: **WQL 3. Water Quality**

These soils have a moderate surface runoff potential and a high leaching index. Nutrient movement to ground waters is a hazard on these soils. Nutrient movement to surface waters could be a hazard on these soils. A system of intense nutrient management practices should be applied to minimize the movement of soluble nutrients below the root zone. Soluble forms of nutrients should be applied with caution or avoided if other forms of nutrients are available.

Map unit: *NaC* Nixa cherty silt loam, 3 to 8 percent slopes

Description Category: **AGR 2. Agronomic**

These soils are moderately suited for pasture and poorly suited for cultivated crops. Slope and high content of chert fragments on the surface are the main restrictions. Erosion is also a severe hazard in areas without adequate cover. Suitable pasture plants include tall fescue, common and improved bermudagrass, and native grasses. Good management practices include controlled grazing and proper stocking. Conservation practices need to be intensified as slope length and gradient increase.

Description Category: **WQL 3. Water Quality**

These soils have an moderate surface runoff potential and a low leaching index. Nutrient movement to surface waters could be a hazard on these soils. In addition to management practices such as soil tests and proper application rates, a system of practices that reduces runoff and erosion should be planned on these soils.

Map unit: *PsB* Pickwick silt loam, 1 to 3 percent slopes

Description Category: **AGR 2. Agronomic**

These soils are well suited for cultivated crops, and pasture and hay. Suitable crops include corn, soybeans, small grain and truck crops. Erosion is a moderate hazard if cultivated crops are grown. Practices such as conservation tillage, contour farming, and the use of cover crops help reduce runoff and control erosion. Adapted pasture plants include common bermudagrass, improved bermudagrass, and tall fescue. There are no significant limitations for pasture.

Description Category: **WQL 3. Water Quality**

These soils have a moderate surface runoff potential and a high leaching index. Nutrient movement to ground waters is a hazard on these soils. Nutrient movement to surface waters could be a hazard on these soils. A system of intense nutrient management practices should be applied to minimize the movement of soluble nutrients below the root zone. Soluble forms of nutrients should be applied with caution or avoided if other forms of nutrients are available.

Map unit: *PsC2* Pickwick silt loam, 3 to 8 percent slopes, eroded

Description Category: **AGR 2. Agronomic**

These soils are moderately suited for cultivated crops, and well suited for pasture and hayland. Runoff is medium to rapid and erosion is a severe hazard if cultivated crops are grown. Practices which help reduce runoff and control erosion are recommended. Adapted pasture plants include common bermudagrass, improved bermudagrass, and tall fescue. There are no significant limitations for pasture.

Description Category: **WQL 3. Water Quality**

These soils have a moderate surface runoff potential and a high leaching index. Nutrient movement to ground waters is a hazard on these soils. Nutrient movement to surface waters could be a hazard on these soils. A system of intense nutrient management practices should be applied to minimize the movement of soluble nutrients below the root zone. Soluble forms of nutrients should be applied with caution or avoided if other forms of nutrients are available.

Map unit: *Rk* Razort loam

Description Category: **AGR** **2. Agronomic**

These soils are well suited for cultivated crops, and pasture and hay. Suitable crops include corn, soybeans, small grain and truck crops. Erosion is a moderate hazard if cultivated crops are grown. Practices such as conservation tillage, contour farming, and the use of cover crops help reduce runoff and control erosion. Adapted pasture plants include common bermudagrass, improved bermudagrass, and tall fescue. There are no significant limitations for pasture.

Description Category: **WQL** **3. Water Quality**

These soils have a slight surface runoff potential and a high leaching index. Nutrient movement to ground waters is a hazard on these soils. Nutrient management practices that minimize the movement of soluble nutrients below the root should be planned on these soils. Soluble forms of nutrients should be avoided if other forms of nutrients are available.

Section 5: Nutrient Application Calculations and Analysis

BIRD GROWTH AND LITTER PRODUCTION (WS-04)

Type of operation	Broilers	Number of flocks per year	5.5
Type of bedding used	Rice Hulls	Number of houses	3
Number of birds per flock	60,000	Target weight of bird at market	6

Table 1. Litter Production. The weight of litter produced per 1,000 birds for different average target weights

Average Target Weight, lbs.	Average Litter Produced, Tons per Flock
2	0.45
4	1
6	1.5
8	2

Total litter production (tons of Litter) = tons of litter/ flock * # flocks * number of birds/1000

495 tons of litter = 1.5 tons litter/ flock * 5.5 flocks * (60,000 birds/ cycle)/1000

495.0	**tons/year**

Table 2. Nutrient Content of Litter (WS-05)

Average Litter Nutrient Content for Arkansas Producers in Pounds per Ton

	Nitrogen (N)*	Phosphorus (P2O5)	Potassium (K2O)
Broiler Litter	56 (34)	54	40
Turkey Litter	55 (33)	69	43
Pullet Litter	41 (26)	53	40
Breeder Hen Litter	42 (26)	62	42

*Nitrogen estimates in parentheses are adjusted for approximately 60% loss due to in-house storage.

Table 3. Nutrient Production (WS-05)

Litter Produced (Tons)	N In-house (lbs)	N After Losses (lbs)	P2O5 Produced (lbs)	K2O Produced (lbs)
495.0	27,720	16,830	26,730	19,800

Calculations: Tons of Litter Produced / Year x Nutrient in Table 2.

PHOSPHOROUS INDEX

Animal waste that is used as fertilizer for pasture and hay land can present some environmental pollution risks depending on characteristics of the soil such as depth to bedrock, surface stones, apparent water table, etc. (see Tables 4 and 5 below). These risks are taken into consideration when planning the application of animal waste as fertilizer and are used in the Assessment of Nutrient Application Needs and Limitations that are found in Table 5. Table 5 also refers to the Phosphorus Index or P-Index.

The P-Index is used as an assessment tool to determine the potential for phosphorus runoff from individual fields and other application sites (see information sheet INF-06, Phosphorus Index for Pastures). A P-Index, which is calculated for each field, can range from Low to Very High. A Low P-Index value indicates that there is a low risk of phosphorus movement from a field and animal wastes can be applied according to a crop's nitrogen needs. A high P-Index value indicates that there is a high risk of phosphorus movement from the soil. Very high P-Index values indicate that no animal waste fertilizer should be applied until soil test phosphorus levels are reduced and conservation practices are in place to lower the calculated P-Index. See Table 6 for litter spreading recommendations.

Table 4. Soils Interpretation by Field (WS-01)*

Field No.	Soil Map Symbol	Predominant Soil Type	Slope Range %	Flooding Potential	Water Table Depth (ft)	Depth to Bedrock (in)	% Cobbles & Stones	Erosion Hazard	Runoff Hazard
1	GuC	Guin cherty silt loam,	3 to 8 %	None	N/A	>40	<10	None	Negligible
1	Rk	Razort loam	0 to 2 %	None	N/A	>40	<10	None	Very Low
2	Rk	Razort loam	0 to 2 %	None	N/A	>40	<10	None	Low
2	GuC	Guin cherty silt loam,	3 to 8 %	None	N/A	>40	<10	None	Negligible
2	ClG	Clarksville cherty silt loam,	12 to 60 %	None	N/A	>40	<10	None	Very Low
3	ClG	Clarksville cherty silt loam,	12 to 60 %	None	N/A	>40	<10	None	Very Low
3	Rk	Razort loam	0 to 2 %	None	N/A	>40	<10	None	Very Low
4	ClG	Clarksville cherty silt loam,	12 to 60 %	None	N/A	>40	<10	None	Low
4	Rk	Razort loam	0 to 2 %	None	N/A	>40	<10	None	Very Low
5	ClG	Clarksville cherty silt loam,	12 to 60 %	None	N/A	>40	<10	None	Very Low
5	Rk	Razort loam	0 to 2 %	None	N/A	>40	<10	None	Very Low
6	PsC2	Pickwick silt loam,	3 to 8 %	None	N/A	>40	<10	None	Negligible
6	PsB	Pickwick silt loam,	1 to 3 %	None	N/A	>40	<10	None	Negligible
7	ClG	Clarksville cherty silt loam,	12 to 60 %	None	N/A	>40	<10	None	Moderate
7	PsC2	Pickwick silt loam,	3 to 8 %	None	N/A	>40	<10	None	Very Low
7	NaC	Nixa cherty silt loam,	3 to 8 %	None	N/A	>40	<10	None	Moderate
8	ClG	Clarksville cherty silt loam,	12 to 60 %	None	N/A	>40	<10	None	Very Low
8	PsB	Pickwick silt loam,	1 to 3 %	None	N/A	>40	<10	None	Negligible
8	NaC	Nixa cherty silt loam,	3 to 8 %	None	N/A	>40	<10	None	Moderate
8	PsC2	Pickwick silt loam,	3 to 8 %	None	N/A	>40	<10	None	Very Low
9	PsC2	Pickwick silt loam,	3 to 8 %	None	N/A	>40	<10	None	Negligible
10	ClG	Clarksville cherty silt loam,	12 to 60 %	None	N/A	>40	<10	None	Very Low
10	NaC	Nixa cherty silt loam,	3 to 8 %	None	N/A	>40	<10	None	Moderate
11	NaC	Nixa cherty silt loam,	3 to 8 %	None	N/A	>40	<10	None	Moderate

*** See Non-Technical Soils Descriptions included with this Plan.**

Predicting Soil Loss Using RUSLE

Land Owner: Jim Hale

Date: 3/17/2006

LS * R * K * C * P = A

Field #	Soil Type	Average Slope*	Average Length*	LS	R	Adjusted K	C	P	A	t Factor
1	GuC	7	35	0.5	270	0.3	0.013	1	0.527	3
1	Rk	7	35	0.5	270	0.3	0.013	1	0.527	5
2	Rk	10	40	0.81	270	0.3	0.013	1	0.853	5
2	GuC	6	40	0.5	270	0.3	0.013	1	0.527	3
2	ClG	7	40	0.5	270	0.3	0.013	1	0.527	5
3	ClG	7	60	0.61	270	0.3	0.013	1	0.642	5
3	Rk	5	60	0.52	270	0.3	0.013	1	0.548	5
4	ClG	15	45	1.2	270	0.3	0.013	1	1.264	5
4	Rk	7	45	0.5	270	0.3	0.013	1	0.527	5
5	ClG	5	35	0.44	270	0.3	0.013	1	0.463	5
5	Rk	5	35	0.44	270	0.3	0.013	1	0.463	5
6	PsC2	2	60	0.23	270	0.35	0.013	1	0.283	5
6	PsB	2	60	0.23	270	0.35	0.013	1	0.283	5
7	ClG	16	70	1.85	270	0.3	0.013	1	1.948	5
7	PsC2	5	70	0.52	270	0.35	0.013	1	0.639	5
7	NaC	6	70	0.61	270	0.35	0.013	1	0.749	4
8	ClG	7	50	0.61	270	0.3	0.013	1	0.642	5
8	PsB	3	50	0.33	270	0.35	0.013	1	0.405	5
8	NaC	6	50	0.61	270	0.35	0.013	1	0.749	4
8	PsC2	5	50	0.52	270	0.35	0.013	1	0.639	5
9	PsC2	3	70	0.33	270	0.35	0.013	1	0.405	5
10	ClG	8	50	0.79	270	0.3	0.013	1	0.832	5
10	NaC	9	50	0.79	270	0.35	0.013	1	0.971	4
11	NaC	5	65	0.52	270	0.35	0.013	1	0.639	4

Arkansas Phosphorus Index and Litter Production Worksheet

Version 2 8/28/01

Producers Name

Jim Hale

Date

3/17/2006

Farm No | **Tract No**

Completed By

Sarah Franklin

Number of Operations	
Flocks per Year	6
Number of Houses in Operation	5
Number of Birds per Flock	60,000
Target Weight of Birds at Market	5
Tons of Litter Produced per Year	495.0

Rainfall Factor

270

Annual Precipitation

40-50 inches

How is Litter Applied

Surface Applied

Field No.	Field AC	Soil Map Unit	Soil Unit Name	Land Use	Hydrologic Condition	Slope Range	Cropping Management	% Slope	Length of Slope	C Factor	Application Timing	Animal Mortality Disposal	Soil Loss
1	5.5	Rk	Razort loam	Pasture	Good	0 to 2 %	Grazed/Hayed	7	35	0.013	March-May	Suited	0.61
2	13.5	ClG	Clarksville cherty silt loa	Pasture	Good	12 to 60 %	Grazed/Hayed	7	40	0.013	March-May	Moderately Suited	0.53
3	6.9	Rk	Razort loam	Pasture	Good	0 to 2 %	Grazed/Hayed	5	60	0.013	March-May	Suited	0.64
4	6.2	Rk	Razort loam	Pasture	Good	0 to 2 %	Grazed/Hayed	10	45	0.013	March-May	Suited	1.00
5	3.1	Rk	Razort loam	Pasture	Good	0 to 2 %	Grazed/Hayed	5	35	0.013	March-May	Suited	0.64
6	16.9	PsB	Pickwick silt loam	Pasture	Good	1 to 3 %	Grazed/Hayed	2	60	0.013	March-May	Suited	0.28
7	8.3	NaC	Nixa cherty silt loam	Pasture	Good	3 to 8 %	Grazed/Hayed	6	70	0.013	March-May	Suited	0.75
8	21.2	PsC2	Pickwick silt loam	Pasture	Good	3 to 8 %	Grazed/Hayed	5	50	0.013	March-May	Suited	0.64
9	15.7	PsC2	Pickwick silt loam	Pasture	Good	3 to 8 %	Grazed/Hayed	3	70	0.013	March-May	Suited	0.41
10	6.3	NaC	Nixa cherty silt loam	Pasture	Good	3 to 8 %	Grazed/Hayed	9	50	0.013	March-May	Suited	0.97
11	10.4	NaC	Nixa cherty silt loam	Pasture	Good	3 to 8 %	Grazed/Hayed	5	65	0.013	March-May	Suited	0.64

* Note: IF you choose Hayland under Land Use, choose Hayland for Pasture Condition

Field No.	Field AC	Soil Test P Lbs/Ac	Litter Application Rate Tons per Acre	Soil Erosion Factor	P Source value	Soil Runoff Class	Flooding Frequency	Appl Meth	Appl Timing	Graz Mgt	No. of Cons Pract.	Annual Precipitation Factor	P index
1	5.5	379	3.0	0.0	1.464414	0.2	0.0	0.2	0.2	0.2		1.0	1.17
2	13.5	184	3.0	0.0	1.334544	0.2	0.0	0.2	0.2	0.2		1.0	1.07
3	6.9	473	2.0	0.0	1.123018	0.2	0.0	0.2	0.2	0.2		1.0	0.90
4	6.2	461	2.0	0.0	1.115026	0.2	0.0	0.2	0.2	0.2		1.0	0.89
5	3.1	487	2.0	0.0	1.132342	0.2	0.0	0.2	0.2	0.2		1.0	0.91
6	16.9	671	3.0	0.0	1.658886	0.1	0.0	0.2	0.2	0.2		1.0	1.16
7	8.3	223	2.0	0.0	0.956518	0.3	0.0	0.2	0.2	0.2		1.0	0.86
8	21.2	546	2.0	0.0	1.171636	0.2	0.0	0.2	0.2	0.2		1.0	0.94
9	15.7	632	3.0	0.0	1.632912	0.1	0.0	0.2	0.2	0.2		1.0	1.14
10	6.3	375	2.0	0.0	1.057750	0.3	0.0	0.2	0.2	0.2		1.0	0.95
11	10.4	617	2.0	0.0	1.218922	0.3	0.0	0.2	0.2	0.2		1.0	1.10
												1.0	
												1.0	
												1.0	

Field No.	Field AC	AC or Buffers	Potential for Phosphorus Movement
1	5.5	0.4	MEDIUM
2	13.5	0.6	MEDIUM
3	6.9	0.0	MEDIUM
4	6.2	0.3	MEDIUM
5	3.1	0.0	MEDIUM
6	16.9	0.7	MEDIUM
7	8.3	0.0	MEDIUM
8	21.2	1.7	MEDIUM
9	15.7	0.0	MEDIUM
10	6.3	0.0	MEDIUM
11	10.4	0.0	MEDIUM

"LOW" potential for P movement from the site. Apply nutrients based on crop needs, normally nitrogen. Caution against long term buildup.

"MEDIUM" potential for P movement from the site. Evaluate the Index and determine any areas that could cause long term concerns. Consider adding conservation practices or reduce P application to maintain the risk at 1.2 or less. Apply nutrients based on crop needs, normally nitrogen.

"HIGH" potential for P movement from the site. Evaluate the Index and determine elevation cause. Add appropriate conservation practices and/or reduced P application. Your immediate planning target is a PI value of 1.2 or less. If this cannot be achieved with realistic conservation practices and/or reduce P rates in the short term, then a management plan needs to be developed with a long-term goal of a PI less than 1.2. Apply nutrients to meet phosphorus needs according to NRCS Nutrient Management standard (590).

"VERY HIGH" potential for P movement from the site. No litter application. Add conservation practices to decrease this value below 1.8 in the short term and develop a progressive conservation plan that would reduce the PI value to a lower risk category, with a long term goal of a PI less than 1.2.

Total Acres in Field	114.0
Total Acres of Buffers	3.7
Tons of Litter Produced	495.0
Total Tons of Litter to be Stored	270.5
Amount of Litter to be Stored or Sold	224.5

Information on this Spreadsheet

Table 5. Nutrient Application Needs and Limitations (WS-06)**

Field No.	Crop	Acres	Major Soil Limitation	P-Index	Site Interpretation for Phosphorus	Acres Without Limitations	Crop Nitrogen Required lbs/ac	Crop Phosphorus Required lbs/ac	Crop Potassium Required lbs/ac
1	Bermuda / Fescue	5.5	None	1.17	MEDIUM	5.1	180	0	0
2	Bermuda / Fescue	13.5	None	1.07	MEDIUM	12.9	180	0	0
3	Bermuda / Fescue	6.9	None	0.90	MEDIUM	6.9	180	0	120
4	Bermuda / Fescue	6.2	None	0.89	MEDIUM	5.9	180	0	0
5	Bermuda / Fescue	3.1	None	0.91	MEDIUM	3.1	180	0	0
6	Bermuda / Fescue	16.9	None	1.16	MEDIUM	16.2	180	0	0
7	Bermuda / Fescue	8.3	None	0.86	MEDIUM	8.3	180	0	0
8	Bermuda / Fescue	21.2	None	0.94	MEDIUM	19.5	180	0	0
9	Bermuda / Fescue	15.7	None	1.14	MEDIUM	15.7	180	0	0
10	Bermuda / Fescue	6.3	None	0.95	MEDIUM	6.3	180	0	0
11	Bermuda / Fescue	10.4	None	1.10	MEDIUM	10.4	180	0	120

****See P-Index for Pastures INF-06 included with this plan.**

LITTER SPREADING RECOMMENDATIONS

Table 6. Recommended Nutrient Application Rates by Field (WS-07)

Field No.	Litter Applied	Nutrients Applied in Litter			Excess or Deficit Nutrients			Commercial Nutrients*		Application Time		Split
	Tons/ac	Nitrogen (lbs/ac)	P2O5 (lbs/ac)	K2O (lbs/ac)	Nitrogen (lbs/ac)	P2O5 (lbs/ac)	K2O (lbs/ac)	Nitrogen (lbs/ac)	Potassium (lbs/ac)	Frequency	Seasons**	Application
1	3	102	162	120	-78	162	120	78	0	2	Sp/Su/F	Yes
2	3	102	162	120	-78	162	120	78	0	2	Sp/Su/F	Yes
3	2	68	108	80	-112	108	-40	112	40	2	Sp/Su/F	Yes
4	2	68	108	80	-112	108	80	112	0	2	Sp/Su/F	Yes
5	2	68	108	80	-112	108	80	112	0	2	Sp/Su/F	Yes
6	3	102	162	120	-78	162	120	78	0	2	Sp/Su/F	Yes
7	2	68	108	80	-112	108	80	112	0	2	Sp/Su/F	Yes
8	2	68	108	80	-112	108	80	112	0	2	Sp/Su/F	Yes
9	3	102	162	120	-78	162	120	78	0	2	Sp/Su/F	Yes
10	2	68	108	80	-112	108	80	112	0	2	Sp/Su/F	Yes
11	2	68	108	80	-112	108	-40	112	40	2	Sp/Su/F	Yes

*** See Soil Analysis Report for complete commercial nutrient application instructions.**

**** S – Spring, Su - Summer, F - Fall**

The above rates are considered the maximum allowable litter application amounts that can be applied on each field annually. The above application recommendations can be repeated annually for the next five years as long as the cropping and management practices remain the same. If changes in management occur, contact a certified nutrient plan writer to ensure application rates are correct. You can contact the Washington County Conservation District at (479) 442-4160.

For litter applications greater than 2 tons/acre or for fields planted in high production vegetation, litter and/or commercial fertilizer applications should be split and applied in two applications rather than one. Split applications of fertilizer should not contain more than 50% of the early crop nitrogen needs.

CONCLUSIONS

According to the information summarized in Tables 3 & 6, this farm will produce a total of 495.0 tons of litter per year and utilize a total of 270.5 tons of litter per year. The 224.5 tons of excess litter should be sold or otherwise used on other farms that also have a NMP in place.

Waste Utilization Requirements Summary*

1) When agricultural wastes are land applied, application rates shall be consistent with requirements of the NRCS conservation practice standard for nutrient management (590).

2) Records of use of wastes shall be kept a minimum of 5 years.

3) Wastes shall be applied at rates not to exceed the crop nutrient requirements.

4) On any manure spreading area (except where liquid wastes are applied) adjacent to streams, ponds, and lakes, and near **critical landscapes features** such as spring seeps, sinkholes, wells, rock outcrops, and loosing streams, the setback distances will be:

Slope %	Setback Distance
0-2	20 ft
>2-<3	30 ft
3 - 8	50 ft
>8	100 ft

* See NRCS standard Waste Utilization (633) for complete description.

Arkansas Title 22 requires that record be kept of the quantity of poultry litter, manure, or other nutrient sources containing nitrogen and phosphorous. Records must be kept for a minimum of 5 years. Forms are provided within this section to maintain this information. Below is a brief description of the record keeping documents and information that should be provided.

Litter Application Field Record

This form can be used to record all land applications of poultry waste on lands that you own or manage.

Report of Litter Sold or Given Away

This form can be used to record the amount and destination of any litter that leaves the farm.

Commercial Fertilizer Application Record

This form can be used to record the amount of commercial fertilizer and date of application to each field.

Litter Application Field Record

Farm Owner (where spread): _____

Farm Owner Address: _____

Spreader Operator Name: _____

Spreader Operator Address: _____

Litter Source: _____

Farm Name: _____

Address: _____

Source	Field ID	Date	Crop	Spreader Type	Spreader Size (Tons)	Field Size (acres)	# Loads per Field	Total tons applied
	1							6 Tons
	2							16 Tons
	3							10
	4							8
	5							6
	6							24
	7							8
	8							24
	9							20
	10							12
	11							16
								150 tons

Poultry Operation Report of Litter Exported from Farm

Source Farm Name:______________________________ **Address** ______________________________

____

Phone ______________________________

Date Transferred	Hauler Name	Hauler Address and Phone	Recipient's Address and Phone	Tons Litter Received

Commercial Fertilizer Applications

Date Applied	Field ID	Field Location	Fertilizer Type	Amount Applied