ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

Annual Report Form For CAFO Operations Permitted Under NPDES General Permit ARG590000

Reporting Period: 1/1/14 through 12/31/14

Permittee: C+H Hog Farms, Inc. Permit Tracking Number: ARG59 0001

Number & type of animals: 2503 swine 55 lbs or more, 750 post weaned swine weighing less than 55lbs
(beef cattle, broilers, layers, swine weighing 55 pounds or more, swine weighing less than 55 pounds, mature dairy cows, dairy heifers, veal calves, sheep and lambs, horses, ducks, turkeys, other.)

Estimated amount of total manure, process water & litter in previous 12 months: 2,614,059 gallons
(Express in tons or gallons)

Estimated amount of total manure, littler and process wastewater transferred to other person by the CAFO in the previous 12 months: 0
(express in tons or gallons, units consistent with previous answer)

Total number of acres available for land application in accordance with NMP: 606.9

Total number of acres used for land application of manure, litter and process wastewater in previous 12 months: 572.4

Summary of all manure, litter or process wastewater discharges from the production area that have occurred in the previous 12 months, including date, time, and approximate volume. Please list in chronological order. Add additional pages if necessary.

	Date	Time	Approximate Volume (gallons)
Discharge 1			None
Discharge 2			
Discharge 3			
Discharge 4			

Has the current version of the CAFO's nutrient management plan was developed or approved by a certified nutrient management planner?

Yes ✓

No ____ Signature Jason Henson Date 1-27-15

Annual Summary, page 1

The actual crop(s) planted and actual yield(s) for each field, the actual nitrogen and phosphorus content of the manure, litter, and process wastewater, the results of calculations conducted in accordance with paragraphs 3.2.5.1.b and 3.2.5.2.d of this section, and the amount of manure, litter, and process wastewater applied to each field during the previous 12 months; and, for any CAFO that implements a nutrient management plan that addresses rates of application in accordance with paragraph 3.2.5.2 of this section, the results of any soil testing for nitrogen and phosphorus taken during the preceding 12 months, the data used in calculations conducted in accordance with paragraph 3.2.5.2.4 of this section, and the amount of any supplemental fertilizer applied during the previous 12 months.

Field ID or Name (same as in NMP)	**Crop Planted**	**Crop Yield (lbs., bu., or ton/acre)**	**Nitrogen Content of waste (lbs/1000 gal or lbs/ton)**	**Phosphorus Content of waste (lbs/1000 gal or lbs/ton)**	**Amount of waste applied in previous 12 months (gal or tons/acre)**	**Results of soil testing for Nitrogen, if required. Include data for calculations (mg/kg)**	**Results of soil testing for Phosphorus, if required. Include data used for calculations (mg/kg)**	**Amount of supplemental fertilizer, if any, used in previous 12 months. Express lbs/acre in 0-0-0 format**
1					46,000 gal			
2					22,600 gal			
3					118,100 gal			
4					28,800 gal			
7					396,200 gal			
8					25,000 gal			
9					103,800 gal			
10					249,200 gal			

WASTEWATER SAMPLE LOCATION: Pond 1

You must submit a copy of the wastewater analysis for each sample provided to cooperative extension service or a private lab. The wastewater analysis must include pH (s.u.), total nitrogen, ammonia nitrogen, total potassium, total phosphorus, and percent solid.

In addition you must submit a copy of the soil analysis for each field with this form. The soil analysis must include pH (su), potassium (lbs/ac), phosphorus (lbs/ac), and nitrates (lbs/ac). At least one soil analysis should be done for each 10 acre track.

Please complete the table on the back for land application report. You must sign and date this report and submit it to the department prior to may 30th of each year. Please keep a copy of this report, the soil analysis, and the wastewater analysis for your record at the facility.

Annual Summary, page 2

The actual crop(s) planted and actual yield(s) for each field, the actual nitrogen and phosphorus content of the manure, litter, and process wastewater, the results of calculations conducted in accordance with paragraphs 3.2.5.1.b and 3.2.5.2.d of this section, and the amount of manure, litter, and process wastewater applied to each field during the previous 12 months; and, for any CAFO that implements a nutrient management plan that addresses rates of application in accordance with paragraph 3.2.5.2 of this section, the results of any soil testing for nitrogen and phosphorus taken during the preceding 12 months, the data used in calculations conducted in accordance with paragraph 3.2.5.2.4 of this section, and the amount of any supplemental fertilizer applied during the previous 12 months.

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11					51,000 gal			
12					48,000 gal			
13					453,550 gal			
14					73,000 gal			
15					401,400 gal			
16					56,000 gal			
17					294,750 gal			

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Winter Application

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3	Mixed	3 tons/acre	9.46 lbs/1000 gal	10.06 lb/1000 gal	56,500 gal	0	42 ppm	0
15	Mixed	3 tons/acre	9.46 lbs/1000 gal	10.06 lbs/1000 gal	54,000 gal	0	15 ppm	0
17	Mixed	3 tons/acre	9.46 lbs/1000 gal	10.06 lbs/1000 gal	6,000 gal	0	50 ppm	0

WASTEWATER SAMPLE LOCATION: Pond 1

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Spring Application, page 1

The actual crop(s) planted and actual yield(s) for each field, the actual nitrogen and phosphorus content of the manure, litter, and process wastewater, the results of calculations conducted in accordance with paragraphs 3.2.5.1.b and 3.2.5.2.d of this section, and the amount of manure, litter, and process wastewater applied to each field during the previous 12 months; and, for any CAFO that implements a nutrient management plan that addresses rates of application in accordance with paragraph 3.2.5.2 of this section, the results of any soil testing for nitrogen and phosphorus taken during the preceding 12 months, the data used in calculations conducted in accordance with paragraph 3.2.5.2.4 of this section, and the amount of any supplemental fertilizer applied during the previous 12 months.

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1	Mixed	4 tons/acre	16.8 lbs/1000gal	18.1 lbs/1000 gal	46,000 gal	0	45 ppm	0
2	Mixed	4 tons/acre	16.8 lbs/1000gal	18.1 lbs/1000 gal	22,600 gal	0	67 ppm	0
4	Mixed	4 tons/acre	16.8 lbs/1000gal	18.1 lbs/1000 gal	28,800 gal	0	46 ppm	0
7	Mixed	6 tons/acre	16.8 lbs/1000gal	18.1 lbs/1000 gal	200,200 gal	0	94 ppm	0
10	Mixed	6 tons/acre	16.8 lbs/1000gal	18.1 lbs/1000 gal	129,000 gal	0	31 ppm	0
11	Mixed	4 tons/acre	16.8 lbs/1000gal	18.1 lbs/1000 gal	51,000 gal	0	27 ppm	0
12	Mixed	6 tons/acre	16.8 lbs/1000gal	18.1 lbs/1000gal	48,000 gal	0	72 ppm	0
13	Mixed	4 tons/acre	16.8 lbs/1000gal	18.1 lbs/1000gal	177,500 gal	0	23 ppm	0

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Spring Application, page 2

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14	Mixed	4 tons/acre	16.8 lbs/1000 gal	18.1 lbs/1000 gal	45,000 gal	0	15 ppm	0
15	Mixed	4 tons/acre	16.8 lbs/1000 gal	18.1 lbs/1000 gal	157,200 gal	0	29 ppm	0
16	Mixed	4 tons/acre	16.8 lbs/1000 gal	18.1 lbs/1000 gal	56,000 gal	0	50 ppm	0
17	Mixed	4 tons/acre	16.8 lbs/1000 gal	18.1 lbs/1000 gal	120,000 gal	0	21 ppm	0

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Summer Application, page 1

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3	Mixed	6 tons/acre	16.8 lbs/1000 gal	18.1 lbs/1000 gal	61,600 gal	0	79 ppm	0
7	Mixed	6 tons/acre	16.8 lbs/1000 gal	18.1 lbs/1000 gal	196,000 gal	0	94 ppm	0
8	Mixed	6 tons/acre	16.8 lbs/1000 gal	18.1 lbs/1000 gal	25,000 gal	0	80 ppm	0
9	Mixed	6 tons/acre	16.8 lbs/1000 gal	18.1 lbs/1000 gal	103,800 gal	0	53 ppm	0
10	Mixed	6 tons/acre	16.8 lbs/1000 gal	18.1 lbs/1000 gal	120,200 gal	0	31 ppm	0
13	Mixed	4 tons/acre	16.8 lbs/1000 gal	18.1 lbs/1000 gal	276,050 gal	0	23 ppm	0
14	Mixed	4 tons/acre	16.8 lbs/1000 gal	18.1 lbs/1000 gal	28,000 gal	0	15 ppm	0
15	Mixed	4 tons/acre	16.8 lbs/1000 gal	18.1 lbs/1000 gal	190,200 gal	0	29 ppm	0

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17	Mixed	4 tons/acre	16.8 lbs/1000gal	18.1 lbs/1000 gal	168,750 gal	0	21 ppm	0

WASTEWATER SAMPLE LOCATION: Pond 1

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I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Jason Henson	Jason Henson	1-27-15
OPERATOR (Please Print)	SIGNATURE	DATE

Mail complete annual report form and annual application report to:
Arkansas Department of Environmental Quality
Permits Branch, 5301 Northshore Drive, North Little Rock, AR 72118
Or email to:

Water-permit@adeq.state.ar.us

Lab. No.	M31142	M31143	M31144
Sample I.D.	6" DOWN	PROFILE	BOTTOM
Animal type	swine	swine	swine
-age/lbs	none given	none given	none given
Bedding type	none	none	none
Manure type	lagoon liquid	lagoon liquid	lagoon liquid
Sample date	9/24/2013	9/24/2013	9/24/2013
Age of manure	none given	none given	none given
pH	7.8	7.7	7.6
EC(umhos/cm)	10020	10060	9880
NOTE: pH and EC were measured on undiluted samples.			
% Solids	0.63	2.56	2.99
-mg/l on as-is basis-			
Total N	763.0	1514.0	1565.0
Total P	134.7	527.5	1139.3
Total K	1080.4	1054.3	1158.8
Total Ca	35.0	379.6	925.3
NH4-N	731.0	875.0	758.0
NO3-N	<0.7	<0.7	<0.7
Total Mg	12.0	228.8	556.5
Total S	35.0	106.8	214.6
Total Fe	12.9	156.6	346.9
Total Mn	6.6	10.1	24.2
Total Zn	1.95	19.66	46.93
Total Cu	0.28	2.31	5.16
Water Extractable P	88.4	137.7	162.6
-lbs/1000 gal on as-is basis-			
Total N	6.36	12.61	13.04
TOTAL P AS "P2O5"	2.57	10.06	21.73
N/P2O5	2.47	1.25	0.60
TOTAL K AS "K2O"	10.80	10.54	11.58
Total Ca	0.29	3.16	7.71
NH4-N	6.09	7.29	6.31
(NH4-N)/N	0.96	0.58	0.48
NO3-N	<0.0006	<0.0006	<0.0006
Total Mg	0.10	1.91	4.64
Total S	0.29	0.89	1.79
Total Fe	0.11	1.30	2.89
Total Mn	0.05	0.08	0.20
Total Zn	0.02	0.16	0.39
Total Cu	0.002	0.019	0.043
Water Extractable P	0.74	1.15	1.35
WEP/P	0.66	0.26	0.14

*lbs/1000gal P2O5 = mg/l Total P on "as-is" basis multiplied by 2.29*0.00833

*lbs/1000gal K2O = mg/l Total K on "as-is" basis multiplied by 1.2*0.00833

*Water Extractable P: 1:100 solids to H2O ratio, I hr shake, centrifuged, filtered, acidified, analysis by ICP

Comments:

Arkansas Nutrient Managemnt Planner with 2009 PI (ver 6/25/2013)

Planner:		Date:	12/18/2013
Plan Description:	C & H Winter Revision		

This worksheet is intended to assist in the writing of Nutrient Management Plans for the application of manure to pasture and hay land. To do this, the worksheet estimates the litter production for the farm, estimates the P Index risk value for the defined conditions of each field, assists with the allocation of nutrients to the various receiving fields, and estimates the amount of litter available for off farm use. This worksheet is the result of an effort to develop a reliable training/planning tool faithful to the 2009 Arkansas P Index developed by a multi-agency effort. However, no guarantees are made, and any observed problems or suggestions for improvement should be directed to Karl VanDevender at kvan@uaex.edu.

County Information

Farm county	Newton
R	270
10-Yr EI	110
Kf adjusted for frost?	Yes

Nutrient Source and Description Information

Manure Source	Source Type	Amount Available		N Concentration		P2O5 Concentration		K2O Concentration		Water Extractable P		Alum Used?
WSP	Liquid Manure	848	1000 gal	12.61	lb/1000 gal	10.06	lb/1000 gal	10.54	lb/1000 gal	1.15	lb/1000 gal	No

Nutrient Loss and Mineralization Factors

Nutrient Source Description	N		P2O5		K2O	
	Storage Losses (%)	Appl. Losses (%)	Storage Losses (%)	Appl. Losses (%)	Storage Losses (%)	Appl. Losses (%)
WSP		25%				

Estimated Plant Available Nutrients

Nutrient Source Description	N			P2O5			K2O			Water Extractable P		
	Concentration		Total (lb)	Concentration		Total (lb)	Concentration		Total (lb)	Concentration		Total (lb)
WSP	9.46	lb/1000 gal	8,020	10.06	lb/1000 gal	8,531	10.54	lb/1000 gal	8,938	1.15	lb/1000 gal	975.2
Totals			8,020			8,531			8,938			975

Field P Index Calculations

Comments:

Arkansas Nutrient Managemnt Planner with 2009 PI (ver 6/25/2013)

Planner:		Date:	12/18/2013
Plan Description:	C & H Winter Revision		

Fields Shown	Soil Test P		Soil Map Unit	Slope Gradient (%)				Slope Length (ft)				Flooding Frequency
7	ppm	lb/ac		Min	Max	Rep	Used	Min	Max	Rep	Used	
JH 3	42	56	48	0	3	2	2	15	75	45	45	Occasional
JH 9	52	69	50	0	3	2	2	15	75	45	45	Occasional
JH Part of 10	69	92	51	2	5	2.5	2.5	15	75	45	45	None
JH Part of 15	15	20	43	8	20	14	14	15	30	20	20	None
JH Part of 17	50	67	1	3	8	5	5	15	75	45	45	None

Field	Field Area (ac)	Buffer Length (ft)	Buffer Width (ft)	Appl Area (ac)	Predominate Vegetation	Percent Ground Cover	Conservation Support Practices (P)	RUSLE 1 (ton/ac)	RUSLE 2 (ton/ac)
JH 3	15.90	1,437	100	12.60	Grass	95-100	None in place	0.05	0.05
JH 9	45.10	4,487	100	34.80	Grass	95-100	None in place	0.05	0.05
JH Part of 10	25.70	523	100	24.50	Grass	95-100	None in place	0.05	0.05
JH Part of 15	42.60	3,615	100	34.30	Grass	95-100	None in place	0.28	0.28
JH Part of 17	52.30	3,703	100	43.80	Grass	95-100	None in place	0.12	0.12
	181.60			150.00					

Field	Pasture Use	Application Method	Application Timing	Nutrient Source	Application Rate		Pre BMP PI Value	P Index Range	Target Post BMPs PI Values
JH 3	Continuously Grazed <0.75 An.Units	Surface Applied	Nov-Feb	WSP	7.00	1000 gal/ac	31	Low	32
JH 9	Continuously Grazed <0.75 An.Units	Surface Applied	Nov-Feb	WSP	6.50	1000 gal/ac	31	Low	32
JH Part of 10	Continuously Grazed <0.75 An.Units	Surface Applied	Nov-Feb	WSP	10.00	1000 gal/ac	30	Low	32
JH Part of 15	Continuously Grazed <0.75 An.Units	Surface Applied	Nov-Feb	WSP	9.90	1000 gal/ac	32	Low	32
JH Part of 17	Continuously Grazed <0.75 An.Units	Surface Applied	Nov-Feb	WSP	7.50	1000 gal/ac	31	Low	32

Best Management Practices

Field	Diversion	Terrace	Pond	Filter Strip	Grassed Waterway	Fencing	Riparian Forest Buffer	Riparian Herbaceous Cover	Field Borders	Post BMP PI Value	P Index Range
JH 3										31	Low
JH 9										31	Low
JH Part of 10										30	Low
JH Part of 15										32	Low
JH Part of 17										31	Low

Comments:

Arkansas Nutrient Managemnt Planner with 2009 PI (ver 6/25/2013)

Planner:									Date:	12/18/2013	
Plan Description:	C & H Winter Revision										

Field Nutrient Application Planning

Per Acre Basis

Field	Nutrient Source	Application			Nutrient Recommendation (lb/ac)			Nutrients Applied (lb/ac)			Surpluses / Deficits (lb/ac)		
		PI Max	Planned		N	P2O5	K2O	N	P2O5	K2O	N	P2O5	K2O
JH 3	WSP	7.00	7.00	1000 gal/ac	100	0	80	66	70	74	-34	70	-6
JH 9	WSP	6.50	6.50	1000 gal/ac	100	0	120	61	65	69	-39	65	-51
JH Part of 10	WSP	10.00	10.00	1000 gal/ac	100	0	50	95	101	105	-5	101	55
JH Part of 15	WSP	9.90	9.90	1000 gal/ac	100	100	80	94	100	104	-6	0	24
JH Part of 17	WSP	7.50	7.50	1000 gal/ac	100	0	120	71	75	79	-29	75	-41

Per Field Basis

Field	Nutrient Source	Application			Nutrient Recommendation (lbs)			Nutrients Applied (lbs)			Surpluses / Deficits (lb)		
		PI Max	Planned		N	P2O5	K2O	N	P2O5	K2O	N	P2O5	K2O
JH 3	WSP	88.20	88.20	1000 gal	1,260	0	1,008	834	887	930	-426	887	-78
JH 9	WSP	226.20	226.20	1000 gal	3,480	0	4,176	2,139	2,276	2,384	-1,341	2,276	-1,792
JH Part of 10	WSP	244.99	244.99	1000 gal	2,450	0	1,225	2,317	2,465	2,582	-133	2,465	1,357
JH Part of 15	WSP	339.58	339.58	1000 gal	3,430	3,430	2,744	3,212	3,416	3,579	-219	-14	835
JH Part of 17	WSP	328.49	328.49	1000 gal	4,380	0	5,256	3,107	3,305	3,462	-1,273	3,305	-1,794
				Totals	15,000	3,430	14,409	11,609	12,348	12,937	-3,391	8,918	-1,471

Manure Distribution Summary

Units Applied by Field and Source

Field	Source				
	WSP (1000 gal)				
JH 3	88.20				
JH 9	226.20				
JH Part of 10	244.99				
JH Part of 15	339.58				
JH Part of 17	328.49				
Total Applied	1,227				
Available	848				
Deficit/Surplus	-379				

AGRICULTURAL DIAGNOSTIC SERVICE LABORATORY
1366 W. Altheimer Dr., Fayetteville, AR 72704
(479)575-3908 agrilab@uark.edu
University of Arkansas, Dept. of Crops, Soils, and Environmental Science

MINNESOTA DEPARTMENT OF AGRICULTURE 2014 Certified Manure Testing Program

LIQUID MANURE FOR FERTILIZER ANALYSIS (report for AGRI-429)

Name:	KARL VanDEVENDER / ANDREW SHARPLE	***Received in lab:***	***3/10/2014***
Address:	2301 S. UNIVERSITY AVE, RM 305K	***E- Mailed:***	***3/19/2014***
City:	LITTLE ROCK	State,Zip:	AR 722041-4940
County:		Check #:	

Lab. No.	M40381	M40382	M40383	M40384	M40385	M40386
Sample I.D.	P1T	P1P	P1B	P2T	P2P	P2B
Animal type	swine	swine	swine	swine	swine	swine
age / lbs	none given	none given	none given	none given	none given	none given
Bedding type	none	none	none	none	none	none
Manure type	pond sludge/liquid	pond sludge/liquid	pond sludge/liquid	pond sludge/liquid	pond sludge/liquid	pond sludge/liquid
Sample date	4/10/2014	4/10/2014	4/10/2014	4/10/2014	4/10/2014	4/10/2014
Age of manure	none given	none given	none given	none given	none given	none given
pH	7.8	7.5	7.3	8.0	7.9	7.8
EC(µmhos/cm)	14830	14770	10860	12640	12490	12370
% Solids	0.95	3.62	13.84	0.62	0.98	3.71
			-mg/l on as-is basis-			
Total N	1674	2689	5255	1235	1396	1770
Total P	178	949	4339	124	160	406
Total K	1371	1437	1607	1214	1226	1231
Total Ca	151	919	5000	79	138	464
NH4-N	1495	1577	1614	1175	1251	1234
NO3-N	<0.07	<0.07	<0.07	0.27	<0.07	<0.07
Water Extractable P	92	194	584	77	79	136
			-lbs/1000 gal on as-is basis-			
Total N	13.9	22.4	43.8	10.3	11.6	14.7
TOTAL P AS "P2O5"	3.4	18.1	82.8	2.4	3.0	7.7
TOTAL K AS "K20"	13.7	14.4	16.1	12.1	12.3	12.3
Total Ca	1.3	7.7	41.7	0.7	1.1	3.9
NH4-N	12.5	13.1	13.4	9.8	10.4	10.3
NO3-N	<0.001	<0.001	<0.001	0.002	<0.001	<0.001
Water Extractable P	0.8	1.6	4.9	0.6	0.7	1.1

*lbs/1000gal P2O5 = mg/l Total P on "as-is" basis multiplied by 2.29*0.00833
*lbs/1000gal K2O = mg/l Total K on "as-is" basis multiplied by 1.2*0.00833
*Water Extractable P: **1:100 solids to H2O ratio**, I hr shake, centrifuged, filtered, acidified, analysis by ICP

Comments:

Arkansas Nutrient Managemnt Planner with 2009 PI (ver 6/25/2013)

Planner:		Date:	4/3/2014
Plan Description:	C & H Spring Revision		

This worksheet is intended to assist in the writing of Nutrient Management Plans for the application of manure to pasture and hay land. To do this, the worksheet estimates the litter production for the farm, estimates the P Index risk value for the defined conditions of each field, assists with the allocation of nutrients to the various receiving fields, and estimates the amount of litter available for off farm use. This worksheet is the result of an effort to develop a reliable training/planning tool faithful to the 2009 Arkansas P Index developed by a multi-agency effort. However, no guarantees are made, and any observed problems or suggestions for improvement should be directed to Karl VanDevender at kvan@uaex.edu.

County Information

Farm county	Newton
R	270
10-Yr EI	110
Kf adjusted for frost?	Yes

Nutrient Source and Description Information

Manure Source	Source Type	Amount Available		N Concentration		P2O5 Concentration		K2O Concentration		Water Extractable P		Alum Used?
WSP #1	Liquid Manure	2089.67	1000 gal	22.4	lb/1000 gal	18.1	lb/1000 gal	14.4	lb/1000 gal	1.6	lb/1000 gal	No
WSP #2	Liquid Manure		1000 gal	11.6	lb/1000 gal	3	lb/1000 gal	12.3	lb/1000 gal	0.7	lb/1000 gal	No

Nutrient Loss and Mineralization Factors

Nutrient Source Description	N		P2O5		K2O	
	Storage Losses (%)	Appl. Losses (%)	Storage Losses (%)	Appl. Losses (%)	Storage Losses (%)	Appl. Losses (%)
WSP #1		25%				
WSP #2		25%				

Estimated Plant Available Nutrients

Nutrient Source Description	N			P2O5			K2O			Water Extractable P		
	Concentration		Total (lb)	Concentration		Total (lb)	Concentration		Total (lb)	Concentration		Total (lb)
WSP #1	16.80	lb/1000 gal	35,106	18.10	lb/1000 gal	37,823	14.40	lb/1000 gal	30,091	1.60	lb/1000 gal	3343.472
WSP #2	8.70	lb/1000 gal		3.00	lb/1000 gal		12.30	lb/1000 gal		0.70	lb/1000 gal	
Totals			35,106			37,823			30,091			3,343

Field P Index Calculations

Comments:

Arkansas Nutrient Managemnt Planner with 2009 PI (ver 6/25/2013)

Planner:		Date:	4/3/2014
Plan Description:	C & H Spring Revision		

Fields Shown	Soil Test P		Soil Map Unit	Slope Gradient (%)				Slope Length (ft)				Flooding Frequency
17	ppm	lb/ac		Min	Max	Rep	Used	Min	Max	Rep	Used	
H1	45	60	42	3	8	5	5	15	75	45	45	None
H2	67	89	43	8	20	14	14	15	30	20	20	None
H3	79	105	48	0	3	2	2	15	75	45	45	Occasional
H4	46	61	43	8	20	14	14	15	30	20	20	None
H7	94	125	48	0	3	2	2	15	75	45	45	Occasional
H8	80	106	51	2	5	2.5	2.5	15	75	45	45	None
H9	53	70	50	0	3	2	2	15	75	45	45	Occasional
H10	31	41	51	2	5	2.5	2.5	15	75	45	45	None
H11	27	36	43	8	20	14	14	15	30	20	20	None
H12	72	96	50	0	3	2	2	15	75	45	45	Occasional
H13	23	31	43	8	20	14	14	15	30	20	20	None
H14	15	20	43	8	20	14	14	15	30	20	20	None
H15	29	39	43	8	20	14	14	15	30	20	20	None
H16	50	67	50	0	3	2	2	15	75	45	45	Occasional
H17	21	28	1	3	8	5	5	15	75	45	45	None

Field	Field Area (ac)	Buffer Length (ft)	Buffer Width (ft)	Appl Area (ac)	Predominate Vegetation	Percent Ground Cover	Conservation Support Practices (P)	RUSLE 1 (ton/ac)	RUSLE 2 (ton/ac)
H1	7.30			7.30	Grass	95-100	None in place	0.12	0.12
H2	6.00			6.00	Grass	95-100	None in place	0.28	0.28
H3	15.20			15.20	Grass	95-100	None in place	0.05	0.05
H4	6.80			6.80	Grass	95-100	None in place	0.28	0.28
H7	64.30			64.30	Grass	95-100	None in place	0.05	0.05
H8	8.60			8.60	Grass	95-100	None in place	0.05	0.05
H9	35.50			35.50	Grass	95-100	None in place	0.05	0.05
H10	29.30			29.30	Grass	95-100	None in place	0.05	0.05
H11	14.20			14.20	Grass	95-100	None in place	0.28	0.28
H12	10.90			10.90	Grass	95-100	None in place	0.05	0.05
H13	50.90			50.90	Grass	95-100	None in place	0.28	0.28
H14	7.30			7.30	Grass	95-100	None in place	0.28	0.28
H15	32.20			32.20	Grass	95-100	None in place	0.28	0.28
H16	15.20			15.20	Grass	95-100	None in place	0.05	0.05
H17	31.90			31.90	Grass	95-100	None in place	0.12	0.12
	335.60			335.60					

Comments:

Arkansas Nutrient Managemnt Planner with 2009 PI (ver 6/25/2013)

Planner:		Date:	4/3/2014
Plan Description:	C & H Spring Revision		

Field	Pasture Use	Application Method	Application Timing	Nutrient Source	Application Rate		Pre BMP PI Value	P Index Range	Target Post BMPs PI Values
H1	Continuously Grazed >0.75 An.Units	Surface Applied	March-June	WSP #1	6.53	1000 gal/ac	26	Low	32
H2	Continuously Grazed >0.75 An.Units	Surface Applied	March-June	WSP #1	4.06	1000 gal/ac	32	Low	32
H3	Rotational Grazing	Surface Applied	March-June	WSP #1	5.59	1000 gal/ac	32	Low	32
H4	Continuously Grazed >0.75 An.Units	Surface Applied	March-June	WSP #1	4.76	1000 gal/ac	32	Low	32
H7	Rotational Grazing	Surface Applied	March-June	WSP #1	5.02	1000 gal/ac	32	Low	32
H8	Rotational Grazing	Surface Applied	March-June	WSP #1	13.15	1000 gal/ac	32	Low	32
H9	Rotational Grazing	Surface Applied	March-June	WSP #1	6.75	1000 gal/ac	32	Low	32
H10	Rotational Grazing	Surface Applied	March-June	WSP #1	14.76	1000 gal/ac	32	Low	32
H11	Continuously Grazed >0.75 An.Units	Surface Applied	March-June	WSP #1	5.69	1000 gal/ac	32	Low	32
H12	Rotational Grazing	Surface Applied	March-June	WSP #1	5.88	1000 gal/ac	32	Low	32
H13	Rotational Grazing	Surface Applied	March-June	WSP #1	6.53	1000 gal/ac	16	Low	32
H14	Rotational Grazing	Surface Applied	March-June	WSP #1	6.53	1000 gal/ac	15	Low	32
H15	Rotational Grazing	Surface Applied	March-June	WSP #1	6.53	1000 gal/ac	17	Low	32
H16	Rotational Grazing	Surface Applied	March-June	WSP #1	6.53	1000 gal/ac	31	Low	32
H17	Rotational Grazing	Surface Applied	March-June	WSP #1	6.53	1000 gal/ac	16	Low	32

Best Management Practices

Field	Diversion	Terrace	Pond	Filter Strip	Grassed Waterway	Fencing	Riparian Forest Buffer	Riparian Herbaceous Cover	Field Borders	Post BMP PI Value	P Index Range
H1										26	Low
H2										32	Low
H3										32	Low
H4										32	Low
H7										32	Low
H8										32	Low
H9										32	Low
H10										32	Low
H11										32	Low
H12										32	Low
H13										16	Low
H14										15	Low
H15										17	Low
H16										31	Low
H17										16	Low

Comments:

Arkansas Nutrient Managemnt Planner with 2009 PI (ver 6/25/2013)

Planner:		Date:	4/3/2014
Plan Description:	C & H Spring Revision		

Field Nutrient Application Planning

Per Acre Basis

Field	Nutrient Source	Application			Nutrient Recommendation (lb/ac)			Nutrients Applied (lb/ac)			Surpluses / Deficits (lb/ac)		
		PI Max	Planned		N	P2O5	K2O	N	P2O5	K2O	N	P2O5	K2O
H1	WSP #1	6.53	6.53	1000 gal/ac	110	30	0	110	118	94	0	88	94
H2	WSP #1	4.06	4.06	1000 gal/ac	110	0	0	68	73	58	-42	73	58
H3	WSP #1	5.59	5.59	1000 gal/ac	300	0	300	94	101	80	-206	101	-220
H4	WSP #1	4.76	4.76	1000 gal/ac	110	30	40	80	86	69	-30	56	29
H7	WSP #1	5.02	5.02	1000 gal/ac	300	0	300	84	91	72	-216	91	-228
H8	WSP #1	13.15	13.15	1000 gal/ac	300	0	250	221	238	189	-79	238	-61
H9	WSP #1	6.75	6.75	1000 gal/ac	300	0	300	113	122	97	-187	122	-203
H10	WSP #1	14.76	14.76	1000 gal/ac	300	90	300	248	267	213	-52	177	-87
H11	WSP #1	5.69	5.69	1000 gal/ac	110	40	40	96	103	82	-14	63	42
H12	WSP #1	5.88	5.88	1000 gal/ac	300	0	250	99	106	85	-201	106	-165
H13	WSP #1	6.53	6.53	1000 gal/ac	110	80	60	110	118	94	0	38	34
H14	WSP #1	6.53	6.53	1000 gal/ac	110	120	60	110	118	94	0	-2	34
H15	WSP #1	6.53	6.53	1000 gal/ac	110	40	0	110	118	94	0	78	94
H16	WSP #1	6.53	6.53	1000 gal/ac	110	0	60	110	118	94	0	118	34
H17	WSP #1	6.53	6.53	1000 gal/ac	110	70	160	110	118	94	0	48	-66

Per Field Basis

Field	Nutrient Source	Application			Nutrient Recommendation (lbs)			Nutrients Applied (lbs)			Surpluses / Deficits (lb)		
		PI Max	Planned		N	P2O5	K2O	N	P2O5	K2O	N	P2O5	K2O
H1	WSP #1	47.67	47.67	1000 gal	803	219	0	801	863	686	-2	644	686
H2	WSP #1	24.36	24.36	1000 gal	660	0	0	409	441	351	-251	441	351
H3	WSP #1	84.95	84.95	1000 gal	4,560	0	4,560	1,427	1,538	1,223	-3,133	1,538	-3,337
H4	WSP #1	32.37	32.37	1000 gal	748	204	272	544	586	466	-204	382	194
H7	WSP #1	322.79	322.79	1000 gal	19,290	0	19,290	5,423	5,842	4,648	-13,867	5,842	-14,642
H8	WSP #1	113.06	113.06	1000 gal	2,580	0	2,150	1,899	2,046	1,628	-681	2,046	-522
H9	WSP #1	239.51	239.51	1000 gal	10,650	0	10,650	4,024	4,335	3,449	-6,626	4,335	-7,201
H10	WSP #1	432.55	432.55	1000 gal	8,790	2,637	8,790	7,267	7,829	6,229	-1,523	5,192	-2,561
H11	WSP #1	80.86	80.86	1000 gal	1,562	568	568	1,358	1,464	1,164	-204	896	596
H12	WSP #1	64.05	64.05	1000 gal	3,270	0	2,725	1,076	1,159	922	-2,194	1,159	-1,803
H13	WSP #1	332.38	332.38	1000 gal	5,599	4,072	3,054	5,584	6,016	4,786	-15	1,944	1,732
H14	WSP #1	47.67	47.67	1000 gal	803	876	438	801	863	686	-2	-13	248
H15	WSP #1	210.27	210.27	1000 gal	3,542	1,288	0	3,532	3,806	3,028	-10	2,518	3,028
H16	WSP #1	99.26	99.26	1000 gal	1,672	0	912	1,668	1,797	1,429	-4	1,797	517
H17	WSP #1	208.31	208.31	1000 gal	3,509	2,233	5,104	3,500	3,770	3,000	-9	1,537	-2,104
				Totals	68,038	12,097	58,513	39,313	42,355	33,697	-28,725	30,258	-24,816

Comments:

Arkansas Nutrient Managemnt Planner with 2009 PI (ver 6/25/2013)

Planner:		Date:	4/3/2014
Plan Description:	C & H Spring Revision		

Manure Distribution Summary

Units Applied by Field and Source

Field	Source				
	WSP #1 (1000 gal)	WSP #2 (1000 gal)			
H1	47.67				
H2	24.36				
H3	84.95				
H4	32.37				
H7	322.79				
H8	113.06				
H9	239.51				
H10	432.55				
H11	80.86				
H12	64.05				
H13	332.38				
H14	47.67				
H15	210.27				
H16	99.26				
H17	208.31				
Total Applied	2,340				
Available	2,090				
Deficit/Surplus	-250				

Comments:

Arkansas Nutrient Managemnt Planner with 2009 PI (ver 6/25/2013)

Planner:		Date:	
Plan Description:	C & H Summer Revision		

This worksheet is intended to assist in the writing of Nutrient Management Plans for the application of manure to pasture and hay land. To do this, the worksheet estimates the litter production for the farm, estimates the P Index risk value for the defined conditions of each field, assists with the allocation of nutrients to the various receiving fields, and estimates the amount of litter available for off farm use. This worksheet is the result of an effort to develop a reliable training/planning tool faithful to the 2009 Arkansas P Index developed by a multi-agency effort. However, no guarantees are made, and any observed problems or suggestions for improvement should be directed to Karl VanDevender at kvan@uaex.edu.

County Information

Farm county	Newton
R	270
10-Yr EI	110
Kf adjusted for frost?	Yes

Nutrient Source and Description Information

Manure Source	Source Type	Amount Available		N Concentration		P2O5 Concentration		K2O Concentration		Water Extractable P		Alum Used?
WSP #1	Liquid Manure	2089.67	1000 gal	22.4	lb/1000 gal	18.1	lb/1000 gal	14.4	lb/1000 gal	1.6	lb/1000 gal	No
WSP #2	Liquid Manure		1000 gal	11.6	lb/1000 gal	3	lb/1000 gal	12.3	lb/1000 gal	0.7	lb/1000 gal	No

Nutrient Loss and Mineralization Factors

Nutrient Source Description	N		P2O5		K2O	
	Storage Losses (%)	Appl. Losses (%)	Storage Losses (%)	Appl. Losses (%)	Storage Losses (%)	Appl. Losses (%)
WSP #1		25%				
WSP #2		25%				

Estimated Plant Available Nutrients

Nutrient Source Description	N			P2O5			K2O			Water Extractable P		
	Concentration		Total (lb)	Concentration		Total (lb)	Concentration		Total (lb)	Concentration		Total (lb)
WSP #1	16.80	lb/1000 gal	35,106	18.10	lb/1000 gal	37,823	14.40	lb/1000 gal	30,091	1.60	lb/1000 gal	3343.472
WSP #2	8.70	lb/1000 gal		3.00	lb/1000 gal		12.30	lb/1000 gal		0.70	lb/1000 gal	
Totals			35,106			37,823			30,091			3,343

Field P Index Calculations

Comments:

Arkansas Nutrient Managemnt Planner with 2009 PI (ver 6/25/2013)

Planner:		Date:	
Plan Description:	C & H Summer Revision		

Fields Shown	Soil Test P		Soil Map Unit	Slope Gradient (%)				Slope Length (ft)				Flooding Frequency
17	ppm	lb/ac		Min	Max	Rep	Used	Min	Max	Rep	Used	
H1	45	60	42	3	8	5	5	15	75	45	45	None
H2	67	89	43	8	20	14	14	15	30	20	20	None
H3	79	105	48	0	3	2	2	15	75	45	45	Occasional
H4	46	61	43	8	20	14	14	15	30	20	20	None
H7	94	125	48	0	3	2	2	15	75	45	45	Occasional
H8	80	106	51	2	5	2.5	2.5	15	75	45	45	None
H9	53	70	50	0	3	2	2	15	75	45	45	Occasional
H10	31	41	51	2	5	2.5	2.5	15	75	45	45	None
H11	27	36	43	8	20	14	14	15	30	20	20	None
H12	72	96	50	0	3	2	2	15	75	45	45	Occasional
H13	23	31	43	8	20	14	14	15	30	20	20	None
H14	15	20	43	8	20	14	14	15	30	20	20	None
H15	29	39	43	8	20	14	14	15	30	20	20	None
H16	50	67	50	0	3	2	2	15	75	45	45	Occasional
H17	21	28	1	3	8	5	5	15	75	45	45	None

Field	Field Area (ac)	Buffer Length (ft)	Buffer Width (ft)	Appl Area (ac)	Predominate Vegetation	Percent Ground Cover	Conservation Support Practices (P)	RUSLE 1 (ton/ac)	RUSLE 2 (ton/ac)
H1	7.30			7.30	Grass	95-100	None in place	0.12	0.12
H2	6.00			6.00	Grass	95-100	None in place	0.28	0.28
H3	15.20			15.20	Grass	95-100	None in place	0.05	0.05
H4	6.80			6.80	Grass	95-100	None in place	0.28	0.28
H7	64.30			64.30	Grass	95-100	None in place	0.05	0.05
H8	8.60			8.60	Grass	95-100	None in place	0.05	0.05
H9	35.50			35.50	Grass	95-100	None in place	0.05	0.05
H10	29.30			29.30	Grass	95-100	None in place	0.05	0.05
H11	14.20			14.20	Grass	95-100	None in place	0.28	0.28
H12	10.90			10.90	Grass	95-100	None in place	0.05	0.05
H13	50.90			50.90	Grass	95-100	None in place	0.28	0.28
H14	7.30			7.30	Grass	95-100	None in place	0.28	0.28
H15	32.20			32.20	Grass	95-100	None in place	0.28	0.28
H16	15.20			15.20	Grass	95-100	None in place	0.05	0.05
H17	31.90			31.90	Grass	95-100	None in place	0.12	0.12
	335.60			335.60					

Comments:

Arkansas Nutrient Managemnt Planner with 2009 PI (ver 6/25/2013)

Planner:		Date:	
Plan Description:	C & H Summer Revision		

Field	Pasture Use	Application Method	Application Timing	Nutrient Source	Application Rate		Pre BMP PI Value	P Index Range	Target Post BMPs PI Values
H1	Continuously Grazed >0.75 An.Units	Surface Applied	July-Oct	WSP #1	9.54	1000 gal/ac	30	Low	40
H2	Continuously Grazed >0.75 An.Units	Surface Applied	July-Oct	WSP #1	5.67	1000 gal/ac	36	Medium	40
H3	Rotational Grazing	Surface Applied	July-Oct	WSP #1	7.91	1000 gal/ac	35	Medium	40
H4	Continuously Grazed >0.75 An.Units	Surface Applied	July-Oct	WSP #1	6.42	1000 gal/ac	36	Medium	40
H7	Rotational Grazing	Surface Applied	July-Oct	WSP #1	7.23	1000 gal/ac	35	Medium	40
H8	Rotational Grazing	Surface Applied	July-Oct	WSP #1	17.03	1000 gal/ac	30	Low	40
H9	Rotational Grazing	Surface Applied	July-Oct	WSP #1	8.79	1000 gal/ac	34	Medium	40
H10	Rotational Grazing	Surface Applied	July-Oct	WSP #1	17.83	1000 gal/ac	28	Low	40
H11	Continuously Grazed >0.75 An.Units	Surface Applied	July-Oct	WSP #1	7.27	1000 gal/ac	36	Medium	40
H12	Rotational Grazing	Surface Applied	July-Oct	WSP #1	8.18	1000 gal/ac	35	Medium	40
H13	Rotational Grazing	Surface Applied	July-Oct	WSP #1	9.54	1000 gal/ac	17	Low	40
H14	Rotational Grazing	Surface Applied	July-Oct	WSP #1	9.54	1000 gal/ac	17	Low	40
H15	Rotational Grazing	Surface Applied	July-Oct	WSP #1	9.54	1000 gal/ac	18	Low	40
H16	Rotational Grazing	Surface Applied	July-Oct	WSP #1	9.07	1000 gal/ac	35	Medium	40
H17	Rotational Grazing	Surface Applied	July-Oct	WSP #1	9.54	1000 gal/ac	17	Low	40

Best Management Practices

Field	Diversion	Terrace	Pond	Filter Strip	Grassed Waterway	Fencing	Riparian Forest Buffer	Riparian Herbaceous Cover	Field Borders	Post BMP PI Value	P Index Range
H1										30	Low
H2										36	Medium
H3										35	Medium
H4										36	Medium
H7										35	Medium
H8										30	Low
H9										34	Medium
H10										28	Low
H11										36	Medium
H12										35	Medium
H13										17	Low
H14										17	Low
H15										18	Low
H16										35	Medium
H17										17	Low

Comments:

Arkansas Nutrient Managemnt Planner with 2009 PI (ver 6/25/2013)

Planner:		Date:	
Plan Description:	C & H Summer Revision		

Field Nutrient Application Planning

Per Acre Basis

Field	Nutrient Source	Application			Nutrient Recommendation (lb/ac)			Nutrients Applied (lb/ac)			Surpluses / Deficits (lb/ac)		
		PI Max	Planned		N	P2O5	K2O	N	P2O5	K2O	N	P2O5	K2O
H1	WSP #1	9.54	9.54	1000 gal/ac	160	30	0	160	173	137	0	143	137
H2	WSP #1	5.67	5.67	1000 gal/ac	160	0	0	95	103	82	-65	103	82
H3	WSP #1	7.91	7.91	1000 gal/ac	300	0	300	133	143	114	-167	143	-186
H4	WSP #1	6.42	6.42	1000 gal/ac	160	30	40	108	116	92	-52	86	52
H7	WSP #1	7.23	7.23	1000 gal/ac	300	0	300	121	131	104	-179	131	-196
H8	WSP #1	17.03	17.03	1000 gal/ac	300	0	250	286	308	245	-14	308	-5
H9	WSP #1	8.79	8.79	1000 gal/ac	300	0	300	148	159	127	-152	159	-173
H10	WSP #1	17.83	17.83	1000 gal/ac	300	90	300	300	323	257	0	233	-43
H11	WSP #1	7.27	7.27	1000 gal/ac	160	40	40	122	132	105	-38	92	65
H12	WSP #1	8.18	8.18	1000 gal/ac	300	0	250	137	148	118	-163	148	-132
H13	WSP #1	9.54	9.54	1000 gal/ac	160	80	60	160	173	137	0	93	77
H14	WSP #1	9.54	9.54	1000 gal/ac	160	120	60	160	173	137	0	53	77
H15	WSP #1	9.54	9.54	1000 gal/ac	160	40	0	160	173	137	0	133	137
H16	WSP #1	9.07	9.07	1000 gal/ac	160	0	60	152	164	131	-8	164	71
H17	WSP #1	9.54	9.54	1000 gal/ac	160	70	160	160	173	137	0	103	-23

Per Field Basis

Field	Nutrient Source	Application			Nutrient Recommendation (lbs)			Nutrients Applied (lbs)			Surpluses / Deficits (lb)		
		PI Max	Planned		N	P2O5	K2O	N	P2O5	K2O	N	P2O5	K2O
H1	WSP #1	69.64	69.64	1000 gal	1,168	219	0	1,170	1,261	1,003	2	1,042	1,003
H2	WSP #1	34.02	34.02	1000 gal	960	0	0	572	616	490	-388	616	490
H3	WSP #1	120.23	120.23	1000 gal	4,560	0	4,560	2,020	2,176	1,731	-2,540	2,176	-2,829
H4	WSP #1	43.66	43.66	1000 gal	1,088	204	272	733	790	629	-355	586	357
H7	WSP #1	464.89	464.89	1000 gal	19,290	0	19,290	7,810	8,414	6,694	-11,480	8,414	-12,596
H8	WSP #1	146.46	146.46	1000 gal	2,580	0	2,150	2,460	2,651	2,109	-120	2,651	-41
H9	WSP #1	312.05	312.05	1000 gal	10,650	0	10,650	5,242	5,648	4,493	-5,408	5,648	-6,157
H10	WSP #1	522.42	522.42	1000 gal	8,790	2,637	8,790	8,777	9,456	7,523	-13	6,819	-1,267
H11	WSP #1	103.23	103.23	1000 gal	2,272	568	568	1,734	1,869	1,487	-538	1,301	919
H12	WSP #1	89.16	89.16	1000 gal	3,270	0	2,725	1,498	1,614	1,284	-1,772	1,614	-1,441
H13	WSP #1	485.59	485.59	1000 gal	8,144	4,072	3,054	8,158	8,789	6,992	14	4,717	3,938
H14	WSP #1	69.64	69.64	1000 gal	1,168	876	438	1,170	1,261	1,003	2	385	565
H15	WSP #1	307.19	307.19	1000 gal	5,152	1,288	0	5,161	5,560	4,424	9	4,272	4,424
H16	WSP #1	137.86	137.86	1000 gal	2,432	0	912	2,316	2,495	1,985	-116	2,495	1,073
H17	WSP #1	304.33	304.33	1000 gal	5,104	2,233	5,104	5,113	5,508	4,382	9	3,275	-722
				Totals	76,628	12,097	58,513	53,934	58,108	46,229	-22,694	46,011	-12,284

Comments:

Arkansas Nutrient Managemnt Planner with 2009 PI (ver 6/25/2013)

Planner:		Date:	
Plan Description:	C & H Summer Revision		

Manure Distribution Summary

Units Applied by Field and Source

Field	Source				
	WSP #1 (1000 gal)	WSP #2 (1000 gal)			
H1	69.64				
H2	34.02				
H3	120.23				
H4	43.66				
H7	464.89				
H8	146.46				
H9	312.05				
H10	522.42				
H11	103.23				
H12	89.16				
H13	485.59				
H14	69.64				
H15	307.19				
H16	137.86				
H17	304.33				
Total Applied	3,210				
Available	2,090				
Deficit/Surplus	-1,121				

From:	C H Hog Farms, Inc.
To:	Water Permit Application; Bailey, John
Cc:	David Brown (Cargill Pork Production); Richard Gray
Subject:	2014 Annual Report for CAFO Operations - C & H Hog Farms, ARG590001
Date:	Tuesday, January 27, 2015 10:11:12 AM
Attachments:	2014 Annual Report for CAFO Operations Under NPDES General Permit ARG590000 - C&H Hog Farms ARG590001.zip C & H Winter Revision 12-18-13.pdf C & H Spring Revision 4-3-14.pdf C & H Summer Revision 2014.pdf Winter Manure Analysis 9-24-13.pdf Spring Summer Manure Analysis 3-10-14.pdf

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Please see the attached for C & H Hog Farms' 2014 Annual CAFO Report. Also included are the Soil Analyses and Manure Analyses.

A hard copy will also be sent via US mail.

Thank you,
Jason Henson