

Tennessee Department of Environment and Conservation, Division of Water Resources

William R. Snodgrass-Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor, Nashville, TN 37243
(615) 532-0625

CONCENTRATED ANIMAL FEEDING OPERATION (CAFO) STATE OPERATING PERMIT (SOP) NOTICE OF INTENT (NOI)

Type of permit you are requesti Application type:	☐ Ne	w Permit	gned to discharge for Permit Modifica	Pe Pe	DPC00000 (n rmit Reissum unice provide	nce	☐ Pen	cnown, please adviso mit Modification number:
OPERATION IDENTIFICATION	ON							
Operation Name: Burchar	n Swine	Farm					County: C	arrol
Operation Location/6450 H	wv 423		tay-fr				Latitude: 3	6.1252
Physical Address: McKen	zie, Tn 3	8201	maken north				1,ongitude:	-88.409
Name and distance to nearest re	cciving wat	er(s): 900 ft 1	lo Tributary	of Guir	s Creek			
If any other State or Federal W.	eter/Weslew	ater Pennits hav	re been obtained	for this site	list thuse po	mit numbe	rjs:	*****
Animal Type: Pou	ltry	Swine	Dairy	☐ Beef	Ott	ner		
Number of Animals: 4980		Number of B	ams; 2		Name of In	togrator: To	sh Pork	
Type of Animal Waste Munage (check all that apply)	ement:	Dry Liquid Liquid	d d, Closed System	(i.e. cover	od tank, unde	r barn pit, et	ie.)	
Attach the NMP NMP A	ttached /	Attach the closur	re plan 🔳 Clo	sure Plan A	usched A	ttach a topo	graphic map	Map Attached
PERMITTEE IDENTIFICATIO	N							
Official Contact (applicant):	rry Bu	ırcham	Title or Positi		ner			
Mailing Address: 4640 H	lwy 4	23	City MC	Kenz	ie	State: Tn	Ζψ: 38201	☐ Correspondence
Phone number(s). 731-41	5-837	5			n3269(@char	ter.net	
Optional Contact:			Title or Positi	ion:				
Address:		fa une out	City: State			Ž.ip:	Correspondence	
Phone number(s):	**********	***********	E-mail:	E-mail:				
	law that them design requiry of the tion, the interest them the them are knowing and the tion of tion of the tion	his document ned to assure the person or aformation su significant priorities.	t and all attac that qualified persons who ibmitted is, to	hrments will personne manage to the best submitting Signature	ere prepare el properly he system, of my knov g false info	ed under i gather ar or those p wledge an ormation,	my direction devaluate persons din delief, tri including to the last tribute tribute to the last tribute tribute to the last tribute t	on or supervisions the information ethe information ectly responsible ue, accurate, and the possibility of t
1	Impaired Receive			High Quality				C Date

CN-1147 (Rev-08-14)

continued

RDA 2366

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Declarations to Nutrient Management Plan:

By my signature below, I affirm that I have read, understand, and will comply with the following stipulations from Tennessee's CAFO regulations that apply to my CAFO operation:

- 1) All animals in confinement are prevented from coming in direct contact with waters of the state
- 2) All chemicals and other contaminants handled on-site are not disposed of in any manure, litter, process wastewater, or storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants.
- 3) Pesticide-contaminated waters will be prevented from discharging into waste retention structures. Waste from pest control and from facilities used to manage potentially hazardous or toxic chemicals shall be handled and disposed of in a manner that will prevent pollutants from entering waste retention structures or waters of the state.
- 4) Chemicals, manure/litter, and process wastewater will be managed to prevent spills.

 Spill clean-up plans will be developed and any equipment needed for spill clean-up will be available to facility personnel.
- 5) All sampling of soil and manure/litter is conducted according to protocols developed by UT Extension.
- 6) All records outlined in the permit that I am applying for will be maintained and available on-site.
- 7) Any confinement buildings, waste/wastewater handling or treatment systems, lagoons, holding ponds, and any other agricultural waste containment/treatment structures constructed or modified after April 13, 2006, are or will be located in accordance with NRCS Conservation Practice Standard 313.
- 8) A copy of the most recent Nutrient Management Plan will be kept as part of the farm records and will be maintained and implemented as written.
- 9) If applicable, all waste directed to under floor pits shall be composed entirely of wastewater (i.e. washwater and animal waste).
- 10) The Tennessee Department of Environment and Conservation Division of Water Resources will be notified of any significant wildlife mortalities near retention ponds or following any land application of animal wastes to fields.
- 11) All employees involved in work activities that relate to permit compliance will receive regular training on proper operation and maintenance (O&M) of the facility and waste disposal. Training shall include appropriate topics, such as land application of wastes, good housekeeping and material management practices, proper O&M of the facility, record keeping, and spill response and clean up. The periodic scheduled dates for such training shall be identified in the current Nutrient Management Plan.
- 12) There shall be no land application of nutrients within 24 hours of a precipitation event that may cause runoff. The operator shall not land apply nutrients to frozen, flooded, or saturated soils.

Signature of CAFO Owner/Operator

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MAY 28 2015

Closure Plan

In the event that Swine production at this location ceases, the following will be done within 360 days:

- All manure in all animal use areas will be removed and spread on the farm or spread elsewhere according to my current Nutrient Management Plan.
- The most current manure analysis will be provided to anyone removing manure from the farm.
- Any dead pigs on the farm will be disposed of at the time of closure according to methods outlined in my current Nutrient Management Plan and or allowable by Tennessee Law.
- Any manure which is land applied will be done so according to the rates discussed in my most recent Nutrient Management Plan.

The following will be completed within a reasonable period as allowable by law using Tennessee Natural Resources Conservation Service (NRCS) Standard Code 360- Closure of Waste Impoundments:

- Any manure storage facility (lagoon) located on the swine farm will be properly decommissioned.
- Any manure currently in storage at the time of closure will be removed and spread on the farm or spread elsewhere according to my current Nutrient Management Plan.
- The lagoon will be breached and backfilled and or converted to freshwater storage according to NRCS standards.

Juny Buter
Date: 5-17-15

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Burcham Swine Farm Extension of Old Nutrient Management Plan All manure is now exported.

Pits are covered and clean water is diverted from buildings.

2.3. Manure Storage

Storage ID	Type of Storage	Pumpable or Spreadable Capacity	Annual Manure Collected	Maximum Days of Storage
Barn 1	In-house storage pit	1,092,596 Gal	1,300,000 Gal	307
Barn 2	In-house storage pit	1,092,596 Gal	1,300,000 Gal	307

2.4. Animal Inventory

Animal Group	Type or Production Phase	Number of Animals	Weight	Confinement Period	Manure Collected (%)	Storage Where Manure Will Be Stored
Pigs 1	Wean-to-finish pig	2,480	140	Jan Early - Dec Late	100	Barn 1
Pigs 2	Wean-to-finish pig	2,480	140	Jan Early - Dec Late	100	Barn 2

(1) Number of Animals is the average number of animals that are present in the production facility at any one time.



⁽²⁾ If Manure Collected is less than 100%, this indicates that the animals spend a portion of the day outside of the production facility or that the production facility is unoccupied one or more times during the confinement period.

2.6. Planned Manure Exports off the Farm

Month- Year	Manure Source	Amount	Receiving Operation	Location
Oct 2015	Barn 1	900,000 Gal	Tosh Farms	
Oct 2015	Barn 2	900,000 Gal	Tosh Farms	
Apr 2016	Barn 1	600,000 Gal	Tosh Farms	
Apr 2016	Barn 2	680,000 Gal	Tosh Farms	
Oct 2016	Barn 1	700,000 Gal	Tosh Farms	
Oct 2016	Barn 2	660,000 Gal	Tosh Farms	
Apr 2017	Barn 1	660,000 Gal	Tosh Farms	
Apr 2017	Barn 2	650,000 Gal	Tosh Farms	
Oct 2017	Barn 1	650,000 Gal	Tosh Farms	
Oct 2017	Barn 2	650,000 Gal	Tosh Farms	
Apr 2018	Barn 1	650,000 Gal	Tosh Farms	
Apr 2018	Barn 2	650,000 Gal	Tosh Farms	
Oct 2018	Barn 1	650,000 Gal	Tosh Farms	
Oct 2018	Barn 2	650,000 Gal	Tosh Farms	
Apr 2019	Barn 1	650,000 Gal	Tosh Farms	
Apr 2019	Barn 2	650,000 Gal	Tosh Farms	
Oct 2019	Barn 1	650,000 Gal	Tosh Farms	
Oct 2019	Barn 2	640,000 Gal	Tosh Farms	

Tosh Farms 1596 Atlantic Avenue Henry Tn

2.8. Planned Internal Transfers of Manure



6.4. Manure Nutrient Analyses

Manure Source	Dry Matter (%)	Total N	otal N NH4-N	Total P ₂ O ₅	Total K ₂ O	Avail. P ₂ O ₅	Avail. K20	Units	Analysis Source and Date
Barn 1		33.1		7.6	16.9	7.6	16.9	Lb/1000Gal	7.6 16.9 7.6 16.9 Lb/1000Gal Burcham 5-1-15
Barn 2		33.1		7.6	16.9	7.6	16.9	Lb/1000Gal	7.6 16.9 7.6 16.9 Lb/1000Gal Burcham 5-1-15

(1) Entered analysis may be the average of several individual analyses.
(2) Tennessee assumes that 100% of manure phosphorus and 100% of manure potassium is crop available. First-year per-acre nitrogen availability for individual manure applications is given in the Planned Nutrient Applications table. For more information about nitrogen availability in Tennessee, see "Manure Application Management," Tables 3 and 4, Tennessee Extension, PB1510, 2/94 (http://wastemgmt.ag.utk.edu/Pubs/PB1510.pdf).

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6.9. Manure Inventory Annual Summary

Mar '15 - Feb '16 Solution Imported ferred In Ferred In Ferred In Feb (16) Imported ferred In Ferred In Ferred In Feb (16) Generated Ferred In Ferred In Ferred In Feb (16) Control (1,300,000) Control (1,300,000)	Manure Source	Plan Period	On Hand	Total	Total	Total	Total	Total	Total	On Hand	Units
Ources Mar '15 - Feb '16 50,000 1,300,000 0 0 0 900,000 Ources Mar '15 - Feb '16 75,000 1,300,000 0 0 0 900,000 Ources Mar '16 - Feb '16 450,000 1,300,000 0 0 0 1,800,000 Ources Mar '16 - Feb '17 450,000 1,300,000 0 0 0 1,300,000 Ources Mar '17 - Feb '18 450,000 1,300,000 0 0 0 1,300,000 Ources Mar '17 - Feb '18 450,000 1,300,000 0 0 0 1,300,000 Ources Mar '18 - Feb '19 440,000 1,300,000 0 0 0 0 1,300,000 Ources Mar '18 - Feb '19 440,000 1,300,000 0<			at Start of Period	Generated	Imported	Trans-	Applied	Exported	Trans-	at End of	
cources Mar '15 - Feb '16 75,000 1,300,000 0 0 cources Mar '16 - Feb '17 450,000 1,300,000 0 0 cources Mar '16 - Feb '17 475,000 1,300,000 0 0 cources Mar '17 - Feb '18 450,000 1,300,000 0 0 cources Mar '17 - Feb '18 450,000 1,300,000 0 0 cources Mar '17 - Feb '18 450,000 1,300,000 0 0 cources Mar '18 - Feb '19 440,000 1,300,000 0 0 cources Mar '18 - Feb '19 875,000 2,600,000 0 0 cources Mar '19 - Feb '19 875,000 2,600,000 0 0 cources Mar '19 - Feb '20 440,000 1,300,000 0 0 cources Mar '19 - Feb '20 440,000 1,300,000 0 0 cources Mar '19 - Feb '20 440,000 1,300,000 0 0	Barn 1	Mar '15 - Feb '16	50,000	1,300,000	0	0	0		0	450.000 Gal	Gal
ources Mar '15 - Feb '16 125,000 2,600,000 0 0 curces Mar '16 - Feb '17 450,000 1,300,000 0 0 curces Mar '16 - Feb '17 475,000 1,300,000 0 0 curces Mar '17 - Feb '18 450,000 1,300,000 0 0 curces Mar '17 - Feb '18 435,000 1,300,000 0 0 curces Mar '17 - Feb '18 440,000 1,300,000 0 0 curces Mar '18 - Feb '19 440,000 1,300,000 0 0 curces Mar '18 - Feb '19 435,000 2,600,000 0 0 curces Mar '18 - Feb '19 475,000 2,600,000 0 0 curces Mar '19 - Feb '20 435,000 1,300,000 0 0 curces Mar '19 - Feb '20 435,000 1,300,000 0 0 curces Mar '19 - Feb '20 435,000 2,600,000 0 0	Barn 2	Mar '15 - Feb '16	75,000	1,300,000	0	0	0		0	475,000 Gal	Gal
Ources Mar '16 - Feb '17 450,000 1,300,000 0 0 Ources Mar '16 - Feb '17 475,000 1,300,000 0 0 Ources Mar '17 - Feb '18 450,000 1,300,000 0 0 Ources Mar '17 - Feb '18 455,000 1,300,000 0 0 Ources Mar '17 - Feb '18 485,000 2,600,000 0 0 Ources Mar '18 - Feb '19 440,000 1,300,000 0 0 Ources Mar '18 - Feb '19 435,000 2,600,000 0 0 Mar '19 - Feb '19 435,000 1,300,000 0 0 Mar '19 - Feb '20 435,000 1,300,000 0 0 Mar '19 - Feb '20 435,000 2,600,000 0 0 Mar '19 - Feb '20 435,000 2,600,000 0 0 Ources Mar '19 - Feb '20 435,000 0 0 0	All Sources	Mar '15 - Feb '16	125,000	2,600,000	0	0	0	1,800,000	0	925,000 Gal	Gal
cources Mar '16 - Feb '17 475,000 1,300,000 0 0 cources Mar '17 - Feb '18 450,000 1,300,000 0 0 cources Mar '17 - Feb '18 450,000 1,300,000 0 0 cources Mar '17 - Feb '18 485,000 2,600,000 0 0 cources Mar '18 - Feb '19 440,000 1,300,000 0 0 cources Mar '18 - Feb '19 875,000 2,600,000 0 0 cources Mar '19 - Feb '20 440,000 1,300,000 0 0 cources Mar '19 - Feb '20 440,000 1,300,000 0 0 cources Mar '19 - Feb '20 485,000 2,600,000 0 0	Barn 1	Mar '16 - Feb '17	450,000	1,300,000	0	0	0	1,300,000	0	450,000 Gal	Gal
ources Mar '16 - Feb '17 925,000 2,600,000 0 0 L Mar '17 - Feb '18 450,000 1,300,000 0 0 Cources Mar '17 - Feb '18 435,000 1,300,000 0 0 Cources Mar '18 - Feb '19 440,000 1,300,000 0 0 Cources Mar '18 - Feb '19 440,000 1,300,000 0 0 Cources Mar '18 - Feb '19 875,000 2,600,000 0 0 Cources Mar '19 - Feb '20 440,000 1,300,000 0 0 Cources Mar '19 - Feb '20 435,000 2,600,000 0 0 Cources Mar '19 - Feb '20 435,000 1,300,000 0 0	Barn 2	Mar '16 - Feb '17	475,000	1,300,000	0	0	0	1,340,000	0	435,000 Gal	Gal
Ources Mar '17 - Feb '18 450,000 1,300,000 0 0 Ources Mar '17 - Feb '18 485,000 2,600,000 0 0 Ources Mar '18 - Feb '19 440,000 1,300,000 0 0 Ources Mar '18 - Feb '19 435,000 2,600,000 0 0 Mar '18 - Feb '19 875,000 2,600,000 0 0 Mar '19 - Feb '20 440,000 1,300,000 0 0 Mar '19 - Feb '20 435,000 1,300,000 0 0 War '19 - Feb '20 435,000 2,600,000 0 0	All Sources	Mar '16 - Feb '17	925,000	2,600,000	0	0	0	2,640,000	0	885,000 Gal	Gal
cources Mar '17 - Feb '18 435,000 1,300,000 0 0 cources Mar '18 - Feb '19 440,000 1,300,000 0 0 0 cources Mar '18 - Feb '19 435,000 1,300,000 0 0 0 cources Mar '19 - Feb '20 440,000 1,300,000 0 0 0 cources Mar '19 - Feb '20 445,000 1,300,000 0 0 0 cources Mar '19 - Feb '20 435,000 1,300,000 0 0 0	Barn 1	Mar '17 - Feb '18	450,000	1,300,000	0	0	0	1,310,000	0	440,000 Gal	Gal
Ources Mar '17 - Feb '18 885,000 2,600,000 0 0 Cources Mar '18 - Feb '19 440,000 1,300,000 0 0 Cources Mar '18 - Feb '19 875,000 2,600,000 0 0 Cources Mar '19 - Feb '20 440,000 1,300,000 0 0 Cources Mar '19 - Feb '20 435,000 1,300,000 0 0 Cources Mar '19 - Feb '20 875,000 2,600,000 0 0	Barn 2	Mar '17 - Feb '18	435,000	1,300,000	0	0	0	1,300,000	0	435,000 Gal	Gal
Mar '18 - Feb '19 440,000 1,300,000 0 0 ources Mar '18 - Feb '19 435,000 2,600,000 0 0 Mar '18 - Feb '19 875,000 2,600,000 0 0 Mar '19 - Feb '20 440,000 1,300,000 0 0 Mar '19 - Feb '20 435,000 1,300,000 0 0 ources Mar '19 - Feb '20 875,000 2,600,000 0 0	All Sources	Mar '17 - Feb '18	885,000	2,600,000	0	0	0	2,610,000	0	875,000 Gal	Gal
cources Mar '18 - Feb '19 435,000 1,300,000 0 0 nar '18 - Feb '19 875,000 2,600,000 0 0 0 mar '19 - Feb '20 440,000 1,300,000 0 0 0 mar '19 - Feb '20 875,000 2,600,000 0 0 0	Barn 1	Mar '18 - Feb '19	440,000	1,300,000	0	0	0	1,300,000	0	440,000 Gal	Gal
ources Mar '18 - Feb '19 875,000 2,600,000 0 0 Mar '19 - Feb '20 440,000 1,300,000 0 0 0 Mar '19 - Feb '20 435,000 1,300,000 0 0 0 Ources Mar '19 - Feb '20 875,000 2,600,000 0 0 0	Barn 2	Mar '18 - Feb '19	435,000	1,300,000	0	0	0	1,300,000	0	435,000 Gal	Gal
Mar '19 - Feb '20 440,000 1,300,000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	All Sources	Mar '18 - Feb '19	875,000	2,600,000	0	0	0	2,600,000	0	875,000 Gal	Gal
ources Mar '19 - Feb '20 435,000 1,300,000 0 0 0	Barn 1	Mar '19 - Feb '20	440,000	1,300,000	0	0	0	1,300,000	0	440,000 Gal	Gal
Mar '19 - Feb '20 875.000 2.600.000 0 0	Barn 2	Mar '19 - Feb '20	435,000	1,300,000	0	0	0	1,290,000	0	445,000 Gal	Gal
	All Sources	Mar '19 - Feb '20	875,000	2,600,000	0	0	0	0 2,590,000	0	885,000 Gal	Gal



6.11. Plan Nutrient Balance

	N (Lbs)	P ₂ O ₅ (Lbs)	K ₂ O (Lbs)
Total Manure Nutrients on Hand at Start of Plan ¹	4,138	950	2,112
Total Manure Nutrients Collected ²	430,300	98,800	219,700
Total Manure Nutrients Imported ³	0	0	0
Total Manure Nutrients Exported ⁴	405,144	93,024	206,856
Total Manure Nutrients Gained/Lost in Transfer ⁵	0	0	0
Total Manure Nutrients on Hand at End of Plan ⁶	29,293	6,726	14,956
Total Manure Nutrients Applied ⁷	0	0	0
Available Manure Nutrients Applied (Utilized by plan's crops) ⁸	0	0	0
Available Manure Nutrients Applied (Not utilized by plan's crops) ⁹	0	0	0
Commercial Fertilizer Nutrients Applied (Utilized by plan's crops) ¹⁰	0	0	0
Commercial Fertilizer Nutrients Applied (Not utilized by plan's crops) ¹¹	0	0	0
Available Nutrients Applied (Manure and fertilizer; utilized by plan's crops) ¹²	0	0	0
Nutrient Utilization Potential ¹³	0	0	0
Nutrient Balance of Spreadable Acres ^{14*}	0	0	0
Average Nutrient Balance per Spreadable Acre per Year 15*	0	0	0

- 1. Values indicate total manure nutrients present in storage(s) at the beginning of the plan.
- 2. Values indicate total manure nutrients collected on the farm.
- 3. Values indicate total manure nutrients imported onto the farm.
- 4. Values indicate total manure nutrients exported from the farm to an external operation.
- 5. Values indicate changes in total manure nutrients due to internal transfers between storage units with differing analyses.
- 6. Values indicate total manure nutrients present in storage(s) at the end of plan.
- 7. Values indicate total nutrients present in land-applied manure. Losses due to rate, timing and method of application are not included in these values.
- 8. Values indicate available manure nutrients applied on the farm based on rate, time and method of application. These values are based on the total manure nutrients applied (row 7) after accounting for state-specific nutrient losses due to rate, time and method of application. Nutrients which will not be utilized by crops in the plan (row 9) are excluded from these values.
- 9. Values indicate manure nutrients applied that will be utilized by crops outside the plan.
- 10. Values indicate nutrients applied as commercial fertilizers and nitrates contained in irrigation water. Nutrients that will not be utilized by crops in the plan (row 11) are excluded from these values.
- 11. Values indicate nutrients applied as commercial fertilizer which will be utilized by crops outside the plan.
- 12. Values are the sum of available manure nutrients applied (row 8) and commercial fertilizer nutrients applied (row 10).
- 13. Values indicate nutrient utilization potential of crops grown. For N the value generally is based on crop N recommendation for non-legume crops and crop N uptake or other state-imposed limit for N application rates for legumes. P_2O_5 and K_2O values generally are based on fertilizer recommendations or crop removal (whichever is greatest).
- 14. Values indicate available nutrients applied (row 12) minus crop nutrient utilization potential (row 13). Negative values indicate additional nutrient utilization potential and positive values indicate over-application.
- 15. Values indicate average per acre nutrient balance. Values are calculated by dividing nutrient balance of spreadable acres (row 14) by the number of spreadable acres in plan and by the length of the plan in years. Negative values indicate additional average per acre nutrient utilization potential and positive values indicate average per acre over-application.
- * Non-trivial, positive values for N indicate that the plan was not properly developed. Negative values for N indicate additional nutrient utilization potential which may or may not be intentional. For example, plans that include legume crops often will not utilize the full N utilization potential for legume crops if manure can be applied to non-legume crops that require N for optimum yield. Positive values for P_2O_5 and/or K_2O do not necessarily indicate that the plan was not developed properly. For example, producers may be allowed to apply N-based application rates of manure to fields with low soil test P values or fields with a low potential P-loss risk based on the risk assessment tool used by the state. Negative values for P_2O_5 and K_2O indicate that planned applications to some fields are less than crop removal rates.

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MAY 26 7015

Waters Agricultural Laboratories, Inc.

Manure/Sludge Analysis and Application Report

P.O. Box 382 * 257 Newton Highway * Camilla, Georgia 31730-0382 * phone: (229) 336-7216

Ship To: TOSH FARMS P.O. BOX 308 HENRY, TN 38231-

Grower: BERCHAM

SampleNumber: 1

Date Submitted:

05/01/2015

Lab Number:

Type:

52049MS

4-25-15 MANURE

Report Date: 05/0

05/04/2015

	Parts per million (ppm)	Pounds per 1000 gallons
Nitrate Nitrogen	3968.2	33.095
P2O5 – Total	906.5	7.560
K2O -Total	2029.1	16.923

Results Reported On:

L=LIQUID BASIS

Remarks

Suggest the use of PLANT and SOIL analysis to monitor the need for additional

and/or build up of some elements.

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MAY 26 2015

Waters Agricultural Laboratories, Inc.

Manure/Sludge Analysis and Application Report

P.O. Box 382 * 257 Newton Highway * Camilla, Georgia 31730-0382 * phone: (229) 336-7216

Ship To:	Grower: BERCHAM		
TOSH FARMS P.O. BOX 308	SampleNumber: 1ST H2	Date Submitted:	05/01/2015
HENRY. TN 38231-	Lab Number: 52051MS	Report Date:	05/04/2015
	Type: 4-22-15 MANUR	E	

	Parts per million (ppm)	Pounds per 1000 gallons
Nitrate Nitrogen	5711.1	47.631
P2O5 – Total	5348.1	44.603
K2O -Total	2305.7	19.230

Results Reported On: L=LIQUID BASIS

Remarks

Suggest the use of PLANT and SOIL analysis to monitor the need for additional

and/or build up of some elements.

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MAY 26 2015

COMPREHENSIVE NUTRIENT MANAGEMENT PLAN

Driving Directions:

From Huntingdon USDA Field Service Center travel North on High Street for 0.2 miles, then West on Veterans Drive for 1.9 miles, then North on State Highway 22 for 8.2 miles, then East on State Highway 423 for 5.3 miles. Swine operation is on the South side of HWY 423.

ONRCS

Jerry Burcham Swine Farm

Prepared by Kevin M.Hart United States Department of Agriculture Natural Resources Conservation Service Huntingdon FSC Office Huntingdon, TN

In cooperation with the Carroll County Soil and Water Conservation District

Date Prepared: 2/26/2008

Hydrologic Unit Code: 080102030202

Facility Coordinates: Latitude – 36° 7' 31.84" N

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AUG 1 9 2009

Permit Section

Map Data © 2008 NAVTEQ or TeleAttes

1. CNMP SIGNATURE PAGE

Owner/Operator

Name: Jerry Burcham	Phone: (731) 352-3269
Address: 4640 Highway 423 McKenzie, TN 38201-8456	
Farm Number(s): 421,557,585,586,6031,6924	Tract(s): 2164,1910,1913,2157,6895, 954
The following people have assisted with the development of the delement meets all applicable NRCS standards.	CNMP and certify that their
Manure and Wastewater Handling and Storage	
Signature:	Date:
Name: Ralph Smith	
Title: NRCS Resource Civil Engineer	
Nutrient Management	
Signature:	Date:
Name: Ralph Smith	
Title: NRCS Resource Civil Engineer	
Land Treatment Practices	
Signature:	Date:
Name: Ralph Smith	
Title: NRCS Resource Civil Engineer	
Certified Conservation Planner	
As a Certified Conservation Planner, I certify that I have reviewed and that the elements of the CNMP are compatible, reasonable,	
Signature:	Date:
Name: James Woodall	
Title: NRCS District Conservationist	
Owner/ Operator	
As the owner/operator, I certify that as the decision-maker, I have process and agree that the items listed in each element are need responsible for keeping all necessary records associated with the is my intent to implement this CNMP in a timely manner as described.	ed. I understand that I am implementation of this CNMP. It
Signature: James Burchan	Date: 3-4-08

1. CNMP SIGNATURE PAGE

Owner/Operator	
Name: Jerry Burcham	Phone: (731) 352-3269
Address: 4640 Highway 423 McKenzie, TN 38201-8456	
Farm Number(s): 421,557,585,586,6031,6924	Tract(s): 2164,1910,1913,2157,6895, 954
The following people have assisted with the development of the development of the following people have assisted with the development of the following people have assisted with the development of the following people have assisted with the development of the following people have assisted with the development of the following people have assisted with the development of the following people have assisted with the development of the following people have assisted with the development of the following people have assisted with the development of the following people have assisted with the development of the following people have assisted with the development of the following people have assisted with the development of the following people have as a second of the following people have a second of the following people hav	of the CNMP and certify that their
Manure and Wastewater Handling and Storage	1 1
Signature:	Date: 4/3 0
Name: Ralph Smith	71.710
Title: NRCS Resource Civil Engineer	
lutrient Management	, ,
Signature:	Date: 3/13/08
Name: Ralph Smith	71.70
Title: NRCS Becomes Civil Engineer	
and Treatment Practices	. /
Signature:	Date: 3/13/06
Name: Ralph Smith	71700
Title: NRCS Resource Civil Engineer	
ertified Conservation Planner	
As a Certified Conservation Planner, I certify that I have re and that the elements of the CNMP are compatible, reason	viewed this plan for technical adequacy
Signature: Ame D. Woods	Date: 4//4/02
Name: James Woodall	1/1/90
Fitle: NRCS District Conservationist	
wner/ Operator	
As the owner/operator, I certify that as the decision-maker,	I have been involved in the planning
process and agree that the items listed in each element are	needed. I understand that I am
esponsible for keeping all necessary records associated was my intent to implement this CNMP in a timely manner as	ith the implementation of this CNMP. It described in the plan
Signature: 4c and A above	Pater 7 44 60

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Addendum to Nutrient Management Plan:

By my signature below, I affirm that I have read, understand, and will comply with the following stipulations from Tennessee's CAFO rule (1200-4-5-.14) that apply to my CAFO operation.

- 1) All clean water (including rainfall) is diverted, as appropriate, from the production area.
- 2) All animals in confinement are prevented from coming in direct contact with waters of the state.
- 3) All chemicals and other contaminants handled on-site are not disposed of in any manure, litter, process wastewater, or storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants.
- 4) All sampling of soil and manure/litter is conducted according to protocols developed by UT Extension.
- 5) All records outlined in 1200-4-5-.14(16)d-f will be maintained and available on-site.
- 6) Any confinement buildings, waste/wastewater handling or treatment systems, lagoons, holding ponds, and any other agricultural waste containment/treatment structures constructed after April 13, 2006 are or will be located in accordance with NRCS Conservation Practice Standard 313.
- 7) Drystacks of manure or stockpiles of litter are always kept covered under roof or tarps.
- 8) An Annual Report will be written for my operation and submitted between January 1 and February 15 of each year. It will include all information required by rule [1200-4-5-.14(16)g].

Signature of CAFO Operator:

Date:

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1.1. INTRODUCTION

This Comprehensive Nutrient Management Plan (CNMP) contains guidance on the proper utilization of manure on swine farms. This document specifically addresses manure/compost handling and storage, nutrient management and land treatment practices; which when integrated; will provide the producer with an informed approach to managing the nutrient resources on his land.

Table 1: Resource Concerns

Soil Erosion Concerns	Water Quality Concerns	Other Concerns Addressed
Erosion around buildings and storage structures	Proper utilization of swine manure	Regulations
Animal waste and other organics	Excessive nutrients and organics in groundwater	Neighbor Relations
	Harmful levels of pathogens in surface water	Aesthetics
		Air Odor and Air Movement

Erosion around buildings and storage structures is addressed in the Land Treatment Practices Section.

Proper utilization of swine manure is addressed in the Manure and Mortality Management Section.

Mr. Burcham hopes to continue the good relationship he has with his neighbors. He plans to make sure aesthetics around the operation are well maintained to prevent potential violations.

The Air Odor and Air Movement concerns are addressed in the Air Quality portion of the Operation and Maintenance section.

This operation is considered a Class II (Medium CAFO) and was permitted in 2006 (TNA000208).

1.2. CURRENT SYSTEM DESCRIPTION

Jerry Burcham operates a 2480 head swine operation and farms 700 acres in Carroll County. His current drift of pigs are housed in a modern grower finishing building, designed and constructed according to NRCS standards and specifications. Mr. Burcham plans to expand the operation by building a new finishing facility with the identical dimensions and functions of his existing building. The specifications of the current (and proposed) building are as follows:

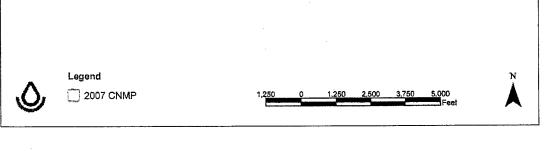
- The clear span to the center of the building is divided by portable aluminum pens.
- Large fans will provide ventilation from the end of the building.
- Automatic feeders and nipple waterers are located through out the building.
- The floor will be precast concrete slatted floor over a concrete foundation and concrete floor, which will act as manure storage similar to a common concrete storage tank.
- The floor is sloped to a sump location for easy unloading by portable or fixed pump.
- The inside dimension of the manure storage is 100.9' x 196.9' x 7.5' deep.
- The facility has capacity for 2480 pigs at an average weight of 135 lbs.
- The manure storage will be emptied after each group is sold and land application will take place at that time.
- Therefore spreading on fields will take place in March-April or September-October.
- The combined facilities will house 4960 pigs.

Map 1 - CNMP Site Map

Burcham CNMP Site Map

Date: 8/9/2007

Customer(s): JERRY BURCHAM District: CARROLL COUNTY SOIL CONSERVATION DISTRICT Field Office: HUNTINGDON SERVICE CENTER Agency: USDA-NRCS Assisted By: Kevin M Hart State and County: TN, CARROLL FSN 6183 T 8885 T 8885



2. MANURE AND WASTEWATER HANDLING AND STORAGE

This element addresses the components and activities, existing and planned, associated with the production facility, manure storage and mortality management structures, and any area used to facilitate transfer of manure or mortalities.

2.1. PRODUCTION INFORMATION

Animal Housed	Grower Pig
Number of Animals (In Structure).	2480
Weight In	15
Weight Out	240
Average Weight	135
Time in Location	6 months
Number of Herds (Per Year)	2
Storage Structure Receiving Manure	Under building

2.2. PROPOSED MANURE HANDLING AND STORAGE

The following sub-sections refer to all works of improvement addressed in this plan and include specifications addressing storage, collection, transfer and application functions.

2.2.1. Manure Production Information

House 1 (Existing)

Menure No. Animals	Average Weight:	Amount Excreted	Total Days	Total	Total
	(lbs)	(cu. Ft/day/1000 lbs)	days/year	cu. Ft	gallons
2480	135	1	365	122202	914071

Wash Water	_ Gallons/Day/Animal ∰	Total Days	Total
	(gal/day/animal)	days/year	gallons
	0,1	365	90520

Total 1004591 peryear

83716 per month

House 2 (Proposed)

11,000	Manure	No, Animals	Average Weight	Amount Excreted	Total Days	Total	Total
			(lbs)	(cu. Ft/day/1000 lbs)	days/year	cu Ft	gallons
		2460	135	1	365	122202	914071

Wash Water	Gallons/Day/Animal	Total Days	Total
	(gal/day/animal)	days/year	galions
	0.1	365	90520

Total 1004591 peryear

83716 per month

2.2.2. Manure Storage Facilities

A concrete tank under the slatted floors of the building measures $100.9' \times 196.9' \times 7.5'$ which yields a maximum of 149,004 cubic feet of storage. The operating plan will never let storage reach this high since application of manure is made when fields are ready and volume is greater than one-year capacity. Fans controlled by sensors remove gasses automatically from the pits.

2.2.3. Storage Period

The storage period is one year, however, the manure will be emptied whenever fields are ready and conditions are right for the injection process.

2.2.4. Manure Nutrient Content

Table 2: Manure Nutrient Contents from Manure Analysis (or Book Values)

Storage Name	% Liquid	Total N	NH4-N	Org -N	NO3-N	P205	K20	Units
House 1 – Pit	98	24.7	23.1	1.6	0	7.9	17.9	Lbs/th gallons
House 2 - Pit*	100	25	15	10	0	23	21	Lbs/th gallons

^{*} Taken from the Animal Waste Manual Field Handbook

2.2.5. Application equipment

The landowner will obtain use of a knife injector system utilizing a tanker pulled by a farm tractor to haul the manure to each field where it will be off loaded into holding bladder feeding a drag hose pulled by a large hp tractor with knife injector.

2.2.6. Time needed to apply storage volume

The storage can be emptied and spread as planned in a five-day continuous work period.

2.3. PROPOSED MORTALITY MANAGEMENT

Dead animals will be disposed of according to state and local laws and in a way that does not adversely affect ground water or create public health concern. All normal mortalities will be rendered and burial will only be used for catastrophic events. The producer should notify the local USDA-NRCS office if the method of disposing of dead animals changes.

2.3.1. Burial

Burial will only be used as a secondary method of mortality disposal- such as a catastrophic situation. NRCS personnel should be contacted to help in the selection of an appropriate disposal site. In general the following criteria will be used to select an appropriate disposal location:

- it is greater than 100 feet away from a private well
- it is greater than 200 feet away from a public well
- it is greater than 50 feet from an adjacent property line
- it is greater than 500 feet from a residence
- it is greater than 100 feet from a stream, lake, pond, wetland, or 100-year floodplain

The burial pit should be graded so that it does not impound water. Runoff from the pit should flow into a grass filter. Note: When adequate drainage is not provided, these pits or trenches fill with water and carcasses may actually float to the surface.

The water in the pit is very bacteria-laden and may be a hazard to both animal and human health. There is also high potential for ground water contamination from both bacteria and nutrients. Burial trenches and pits must have at least a 2.0-foot separation between the bottom of the trench and groundwater. The pits should also have a berm to divert rainfall and runoff from the site. The soil should be able to infiltrate any rainfall that falls directly into the pit. Vectors (dogs, rats, snakes, flies, etc.) are potential problems in a burial situation. The carcasses must be covered daily as to reduce vectors in and around the trench or pit. When a burial pit is full, the site shall be capped with a mound of soil so that precipitation is not allowed to collect in the closed pit. Soil shall cover the carcasses a minimum of 2 feet. The area shall be grassed as to prevent erosion. The burial area shall be monitored so that these conditions remain after settling of decomposing carcasses and capping material.

2.4. FEED MANAGEMENT

Feed management activities may be used to reduce the nutrient content of manure, which may result in less land being required to effectively utilize the manure. Feed management activities may be dealt with as a planning consideration and not as a requirement that addresses specific criteria; however, AFO owners/operators are encouraged to incorporate feed management as part of their nutrient management strategy. Specific information and recommendations should be obtained from Land Grant Universities, industry, the Agricultural Research Service, or professional societies such as the Federation of Animal Science Societies (FASS) or American Registry of Professional Animal Scientists (ARPAS), or other technically qualified entities. Specific feed management activities to address nutrient reduction in manure may include phase feeding, amino acid supplemented low crude protein diets, and the use of low phytin phosphorus grain and enzymes, such as phytase or other additives. Feed management can be an effective approach to addressing excess nutrient production and should be encouraged; however, it is also recognized that feed management may not be a viable or acceptable alternative for all AFOs. A professional animal nutritionist should be consulted before making any recommendations associated with feed ration adjustment. Integrator will provide feed management. Any significant changes that would result in nutrient changes in the manure will require a re-evaluation of this plan (CNMP).

2.5. MANAGEMENT OF MEDICAL ANIMAL WASTE

This operation is managed so as not to generate animal medical waste. Any medical treatment provided onsite will be handled by veterinary personnel capable of disposing of all medical waste created.

2.6. Closure Plan

In the event of this operation closing, the land owner will take such measures as necessary to remove all animals and waste/manure from the site. Any stockpiled manure will be land applied in accordance with NRCS standards and specifications. Damaged or disassembled facilities will be disposed of in a manner meeting local, state, and federal guidelines.

2.7. EMERGENCY ACTION PLAN

The emergency action plan will be implemented in the event that animal by-products from the operation are leaking, overflowing, running off site or are in imminent danger of doing so. The operator should not wait until manure reach surface water or leave the property to consider that there is a problem. This plan should be posted in an accessible location for all employees at the facility. The following are some action items you should take.

1. Threatening Natural Occurrences

Prevent or minimize damage caused by threatening natural occurrences, such as tornadoes or strong storms associated with approaching fronts - actions include:

- a. Do not spread manure on fields just prior to an approaching storm.
- b. Do not spread manure on fields that flood during high rainfall events.
- c. Notify State Veterinary Office Animal Emergency Response Coordinator (See Table below) or Local Animal Emergency Response Coordinator for relocation of animals if needed.

2. Personal injury

- a. Stop all other activities to deal with the emergency.
- b. Call for help (See Table below).

3. Catastrophic deaths - Disease Related

- a. Notify State Veterinary Office.
- b. Limit exposure to other birds.
- c. Prevent visitation by unnecessary people.
- d. Dead animals should be moved into an approved transport vehicle or an approved storage area or bin.
- e. Record date of catastrophic deaths, number of deaths, method and location of disposal.

4. Catastrophic deaths - Disaster Related

- a. Notify State Veterinary Office Animal Emergency Response Coordinator immediately. (See Table below)
- b. Notify the integrator farm manager to remove useable animals.
- c. Remove mortality from the barns/houses.
- d. Dispose of mortality in the manner given in this CNMP for emergency dead animal disposal.
- e. Record date of catastrophic deaths, number of deaths, method and location of disposal.

5. Manure Removal

- a. Place manure in stacking structure if available. Do not stack old manure next to new or wet manure next to dry.
- b. Cover any manure stacks for temporary storage with plastic and weight down the edges. Cut a 4" diameter hole in the top and cover the hole with screen wire.

6. Fire

- a. Stop all other activities to deal with the emergency.
- b. Try to extinguish the fire with the appropriately rated fire extinguishers.
- c. If fire cannot be contained, call for help (See Table below.)

7. Assess the extent of the spill and note any obvious damages.

- a. Did the by-product reach any surface waters?
- b. Approximately how much was released and for what duration?
- c. Any damage noted, such as employee injury, fish kills, or property damage?
- d. Did the spill leave the property?

- e. Did the spill have the potential to reach surface waters?
- f. Could a future rain event cause the spill to reach surface waters?
- g. Are potable water wells in danger (either on or off of the property)?
- h. How much reached surface waters?
- 8. Provide the following information when reporting an emergency.
 - a. Your name and phone number.
 - b. Directions to the farm.
 - c. Description of emergency.
 - d. Estimate of the amounts, area covered, and distance traveled.
 - e. Has manure reached surface waters or major field drains?
 - f. Is there any obvious damage: employee injury, fish kill, or property damage?
 - g. What is currently in progress to contain situation?
- 9. Implement procedures as advised by TDEC and technical assistance agencies to rectify the damage, repair the system, and reassess the manure management plan to keep problems with release of manure from happening again.
- **10. Documentation.** The following items shall be documented in writing and filed with the Emergency Action Plan for future reference and emergency response training.
 - a. Date and time, location of spill, affected landowners.
 - b. Affect of manure spill on any surface water body or potable water well.
 - c. Approximately how much manure was released and for what duration.
 - d. Amount of manure, if any, that left the farm property.
 - e. Any damage, such as personal injury, fish kill, property damage.
 - f. Cause of the spill.
 - g. Procedure to handle the emergency.
 - h. Clean up efforts.
 - i. List of authorities called, those that responded, and the time it took for them to respond.
 - j. Recommendations to prevent a reoccurrence.

Table 3: Information and Important Phone Numbers for Emergency Response

Farm Information

Farm Name	Jerry Burcham
Address	4640 Highway 423 McKenzie,TN 38201-8456
Farm Phone No.	(731) 352-3269
Permit No.	
Directions to Farm	From Huntingdon travel North on High Street for 0.2 miles, then West on Veterans Drive for 1.9 miles, then North on State Highway 22 for 8.2 miles, then East on State Highway 423 for 5.3 miles. Swine operation is on the South side of HWY 423.

Farm Contacts

Name Name	Phone	Emergency Phone
Farm Owner Jerry Burcham	(731) 352-3269	(731) 415-8375
Farm Manager same	same	same
Farm Operator same	same	same

Agency Contacts

Contact Agency	Person/Office Name	Phone	Emergency Number
TDEC.	Pat Patrick	(731) 512-1300	
State Veterinarian	Dr. Ronald B. Wilson	(615) 837-5120	(615) 837-5120
Fire Department	911	911	911
Sheriffs Office	Bendell Bartholomew	(731) 986-8947	. *
NRCS	NRCS Field Office	(731) 415-4153	
UT Extension	County Office	(731) 986-1976	
Integrator	Tosh Farms	(731) 243-4861	

2007 CNMP_T 954

Date: 8/9/2007

Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

Field Office: CAMDEN SERVICE CENTER

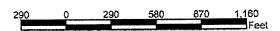
Agency: USDA-NRCS Assisted By: Kevin M Hart State and County: TN, CARROLL





Legend

2007 CNMP_T 954





Buffers Map_T 954

Date: 8/9/2007

Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

Field Office: HUNTINGDON SERVICE CENTER

Agency: USDA-NRCS
Assisted By: Kevin M Hart
State and County: TN, CARROLL



Legend

2007 CNMP_T 954

300' Dwelling Buffer_T 954.shp

50' Road Buffer.shp

50' Waterbody Buffer.shp







Topo Map_T 954

Customer(s): JERRY BURCHAM

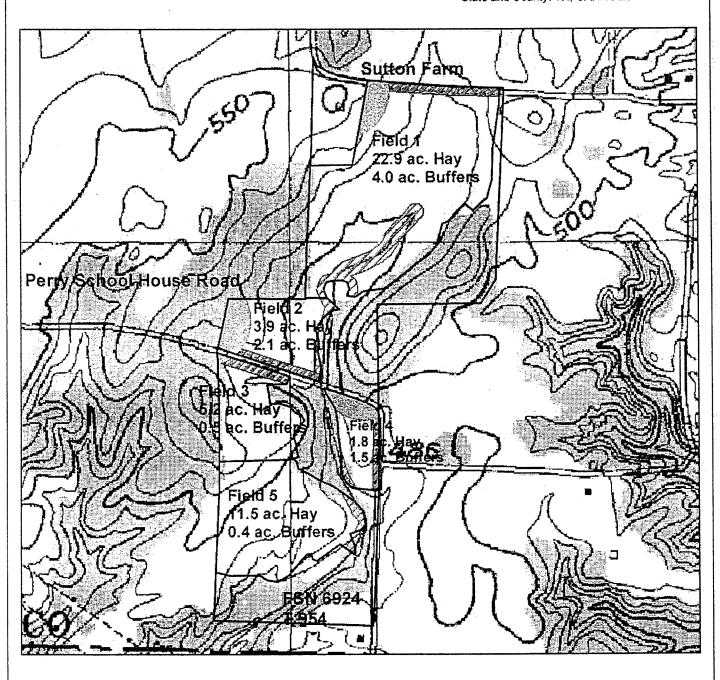
District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

Field Office: HUNTINGDON SERVICE CENTER

Date: 8/9/2007

Agency: USDA-NRCS Assisted By: Kevin M Hart

State and County: TN, CARROLL



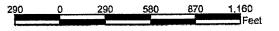


2007 CNMP_T 954

300' Dwelling Buffer_T 954.shp

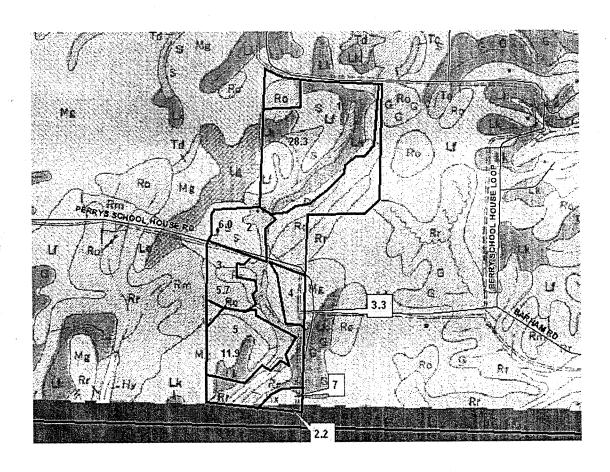
50' Road Buffer.shp

50' Waterbody Buffer.shp









Map Symbol	Map Unit Name	Hydrologic Group	Slope
Hx	HYMON AND BEECHY FINE SANDY LOAM	c '	0 to 2
	(COLLINS-BIBB)		percent
Lf	LEXINGTON SILT LOAM, ERODED,	В	2 to 5
	UNDULATING		percent
Lk	LEXINGTON SILTY CLAY LOAM, SEVERELY	В	5 to 12
	ERODED, ROLLING		percent
Mg	MEMPHIS SILT LOAM, ERODED,	В	2 to 5
_	UNDULATING (LEXINGTON)		percent
Rc	ROBERTSVILLE SILT LOAM	D	0 to 2
			percent
Ro	RUSTON FINE SANDY LOAM, ERODED,	В	5 to 12
	ROLLING (SMITHDALE)		percent
Rr	RUSTON FINE SANDY LOAM, HILLY	В	12 to 25
	(SMITHDALE)		percent
Tc	TIGRETT FINE SANDY LOAM (STATLER)	В	1 to 5
			percent

2007 CNMP_T 1910

Date: 8/10/2007

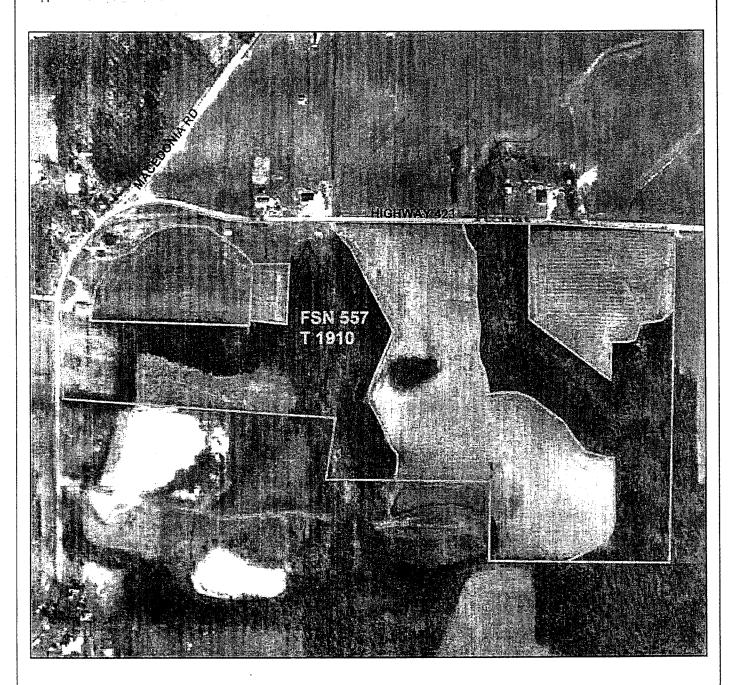
Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

Approximate Acres: 27.4

Field Office: HUNTINGDON SERVICE CENTER

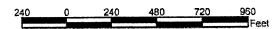
Agency: USDA-NRCS Assisted By: Kevin M Hart





Legend

2007 CNMP_T 1910





Buffers Map_T 1910

Date: 8/10/2007

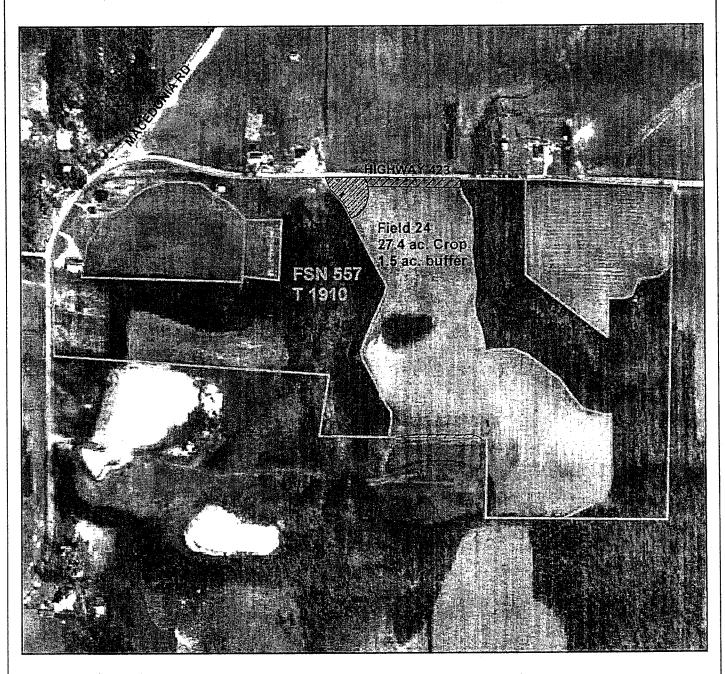
Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

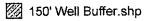
Approximate Acres: 27.4

Field Office: HUNTINGDON SERVICE CENTER

Agency: USDA-NRCS Assisted By: Kevin M Hart



Legend



30' Waterbody Buffer

BurchamWellSites

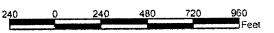


50' Road Buffer



2007 CNMP_T 1910







Topo Map_T 1910

Date: 8/10/2007

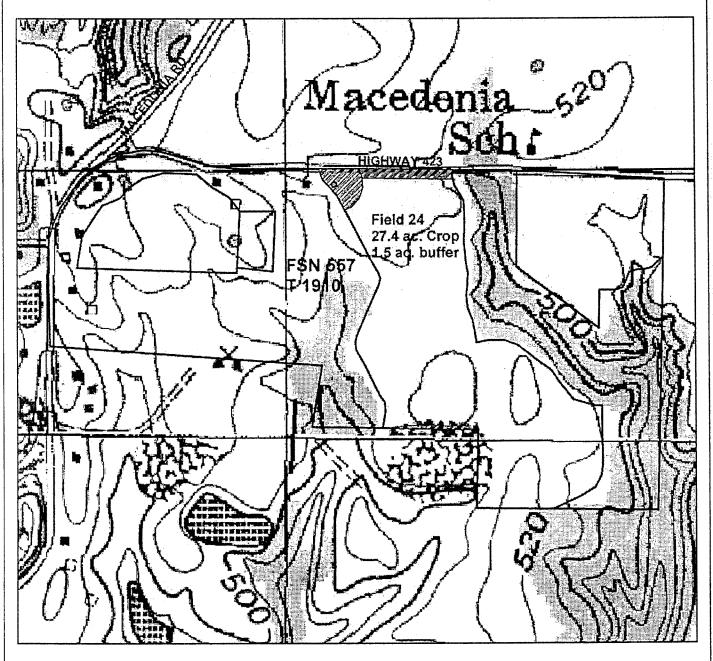
Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

Approximate Acres: 27.4

Field Office: HUNTINGDON SERVICE CENTER

Agency: USDA-NRCS
Assisted By: Kevin M Hart



Legend

Water Well

150' Well Buffer.shp

30' Waterbody Buffer

50' Road Buffer

___ 2007 CNMP_T 1910









Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ca .	Calloway silt toam	C	36	3.7%
Ce	Collins sit form, occasionally flooded	c	13.4	11,5%
G/B	Grenatia silitonm. 2 to 5 percent slopes	С	1.0	10%
L+B	Lexington six foam, 2 to 5 percent slopes	В	48.7	49.3%
rec3	Lexington sill foem. 5 to 8 percent slopes. eroded	8	11.8	11.99
LeD2	Lexington sit loam, 8 to 12 percent slopes. eraded	В	14.2	\$4.45
SmE	Smithdale fine sanity loam, 12 to 20 percent stopes	В	4.8	5.63
SmE3	Servitedule line sandy fourn, 12 to 20 percent stopes, severely eroded	В	1.8	2.0%
Ub	Udorthents-Pils complex	Îc .	13	1,39

2007 CNMP_T 1913

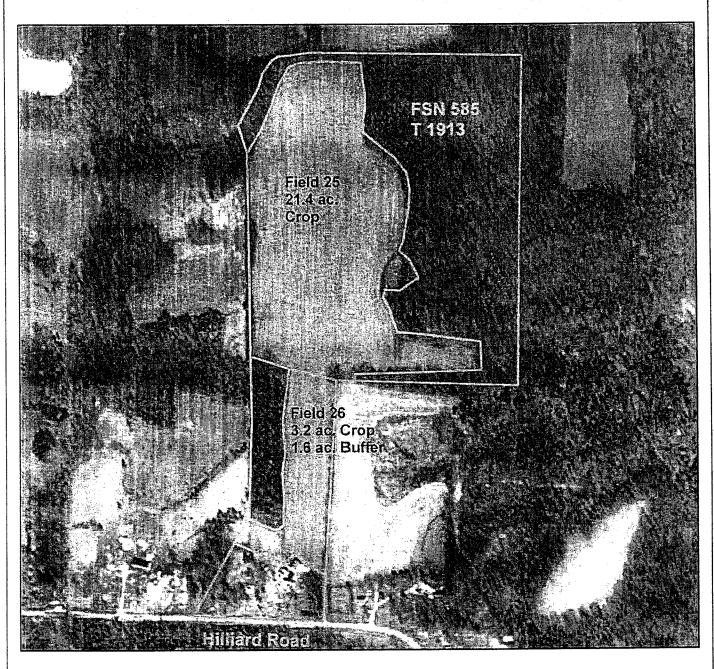
Date: 8/8/2007

Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

Field Office: HUNTINGDON SERVICE CENTER

Agency: USDA-NRCS
Assisted By: Kevin M Hart
State and County: TN, CARROLL





Legend

2007 CNMP_T 1913

210 0 210 420 630 840 Feet



Buffers Map_T 1913

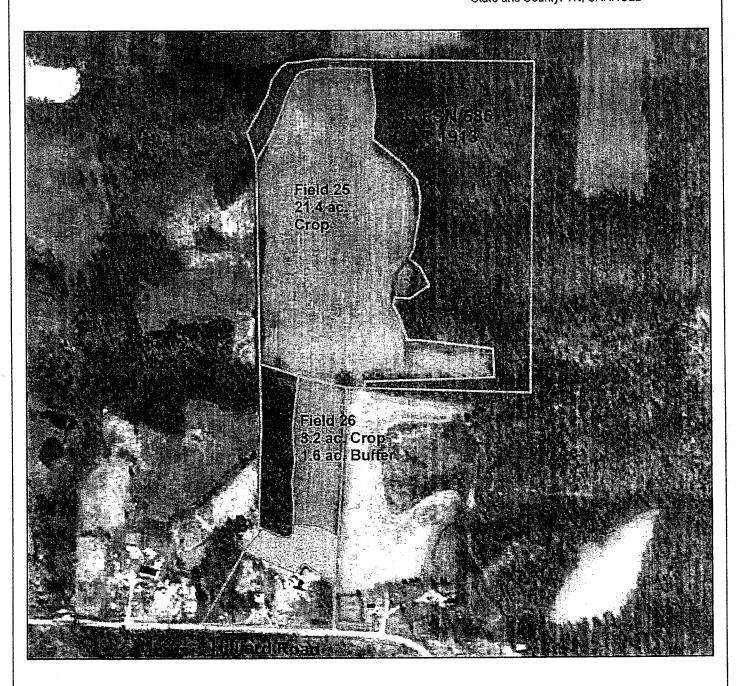
Date: 8/8/2007

Customer(s): JERRY BURCHAM

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Agency: USDA-NRCS Assisted By: Kevin M Hart State and County: TN, CARROLL



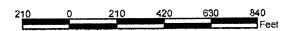
Legend



2007 CNMP_T 1913



300' Dwelling Buffer.shp





Topo Map_T 1913

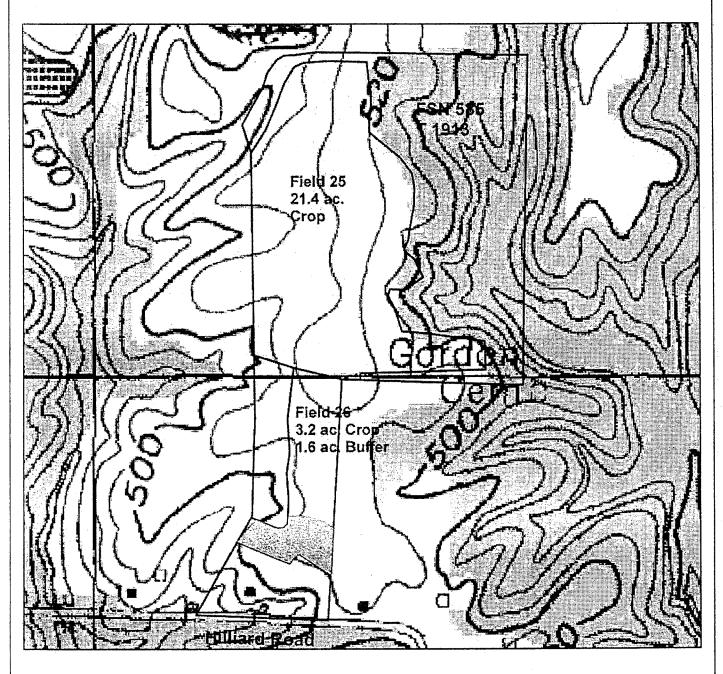
Date: 8/8/2007

Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

Field Office: HUNTINGDON SERVICE CENTER

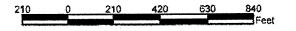
Agency: USDA-NRCS
Assisted By: Kevin M Hart
State and County: TN, CARROLL



Legend

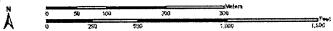












LISDA

Conservation Service

Web Soil Survey 2.0 National Cooperative Soil Survey 8/16/2007 Page 1 of 4

Map unit symbol	Map unit name	Rating	Acres In AOI	Percent of AOI
Co	Collins sill loam, occasionally flooded	С	3.2	6.1%
LeB	Lexington sitt loam, 2 to 5 percent slopes	В	23.4	44.1%
SmD2	Smithdale fine sandy loam, 8 to 12 percent slopes, eroded	8	3.3	6.3%
SmE	Smithdale fine sandy loam, 12 to 20 percent slopes	В	13.1	24.7%
SmE3	Smithdale fine sandy loam, 12 to 20 percent slopes, severely eroded	В	9.6	18.19
Up	Udorthents-Pits complex	С	0.4	0.79

2007 CNMP_T 2157

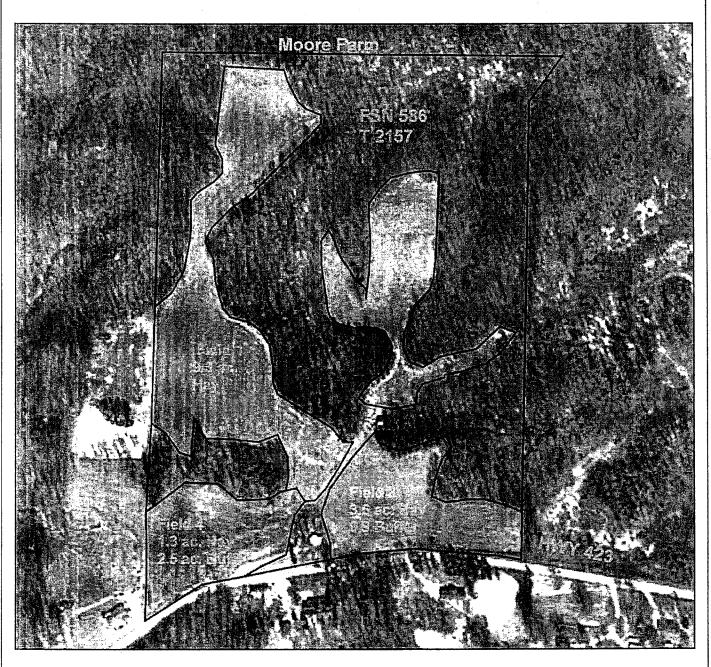
Date: 8/8/2007

Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

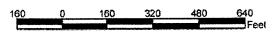
Field Office: HUNTINGDON SERVICE CENTER

Agency: USDA-NRCS
Assisted By: Kevin M Hart
State and County: TN, CARROLL





Legend





Buffers Map_T 2157

Date: 8/8/2007

Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

Field Office: HUNTINGDON SERVICE CENTER

Agency: USDA-NRCS Assisted By: Kevin M Hart



Legend



50' Road Buffer_T 2157.shp



300' Dwelling Buffer_T 2157.shp









Topo Map_T 2157

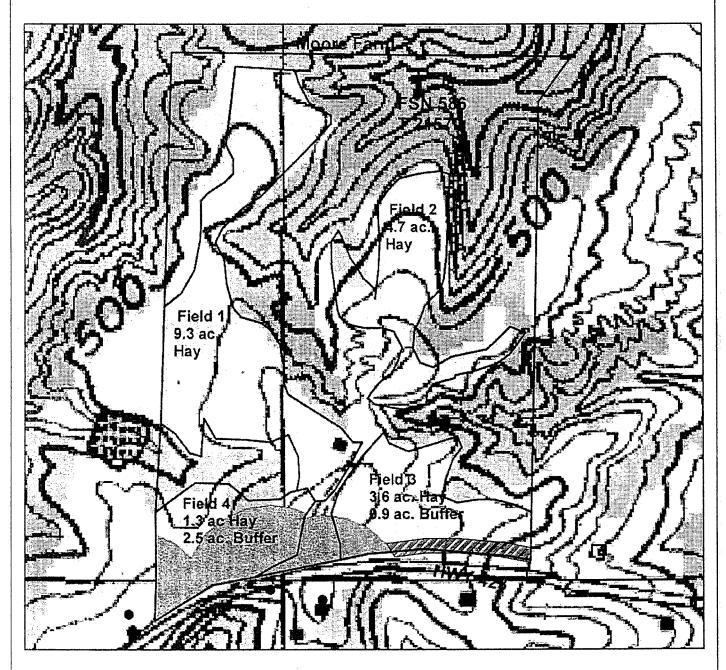
Date: 8/8/2007

Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

Field Office: HUNTINGDON SERVICE CENTER

Agency: USDA-NRCS
Assisted By: Kevin M Hart
State and County: TN, CARROLL



Legend

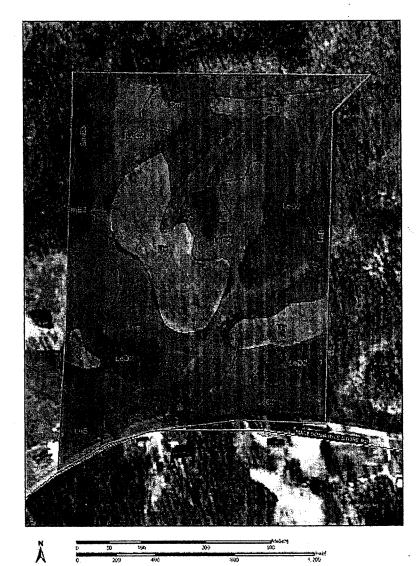
2007 CNMP_T 2157

50' Road Buffer_T 2157.shp

300' Dwelling Buffer_T 2157.shp







Hatural Resources
Conservation Service

Web Soil Survey 2.0 National Cooperative Soil Survey

5/10/2007 Page 1 of 4

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Co	Collins sik loam, occasionally flooded	С	0.5	0.9%
Fa	Falaya silt loam, occasionally flooded	۵	4.3	7.6%
LeB	Lexington stil loam, 2 to 5 percent slopes	В	9.4	16.7%
LeC2	Lexington silt loam, 5 to 8 percent slopes, eroded	В	15.8	28.1%
LeD2	Lexington slit loam, 8 to 12 percent slopes, eroded	В	12.0	21.4%
SmE	Smithdate fine sandy loam, 12 to 20 percent slopes	В	4.9	8.7%
SmE3	Smithdale fine sandy loam, 12 to 20 percent slopes, severely eroded	B .	1.2	2.1%
Us	Udorthents-Smithdale complex, guilted	С	8.1	14.5%
Totals for Area of Intere	(40)		56.0	100.0%

2007 CNMP_T 2164

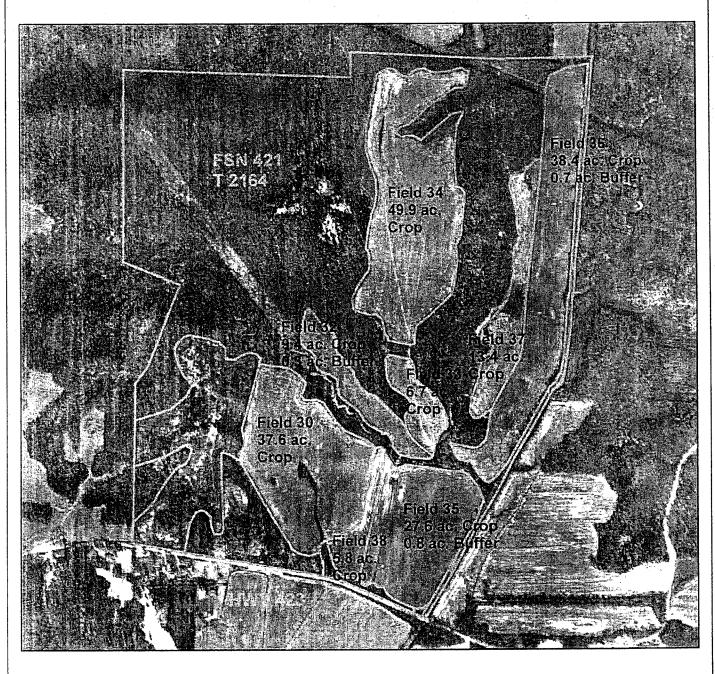
Date: 8/8/2007

Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

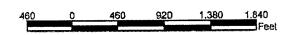
Field Office: HUNTINGDON SERVICE CENTER

Agency: USDA-NRCS
Assisted By: Kevin M Hart
State and County: TN, CARROLL





Legend





Buffer Map_T 2164

Date: 8/8/2007

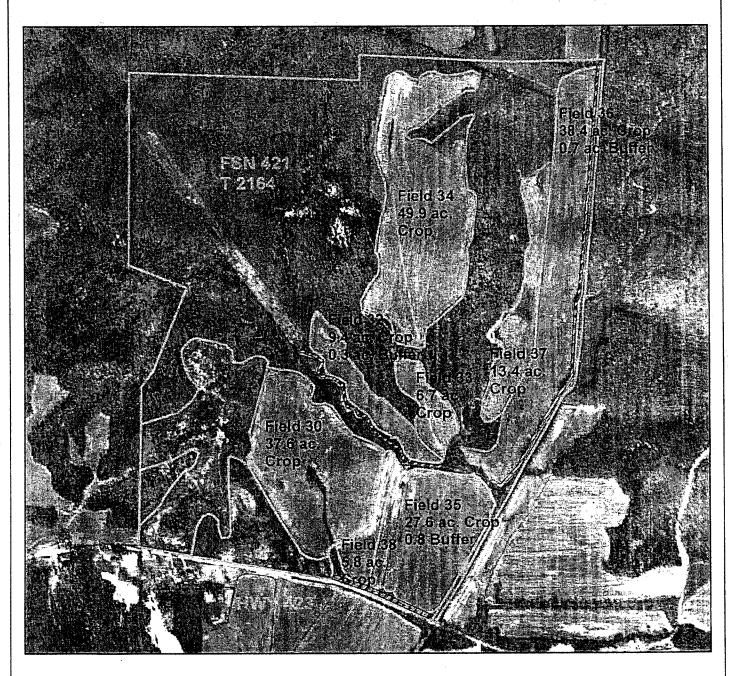
Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

Field Office: HUNTINGDON SERVICE CENTER

Agency: USDA-NRCS
Assisted By: Kevin M Hart

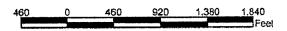
State and County: TN, CARROLL



Legend

30' Waterbody Buffer_T 2164.shp

50' Roads Buffer_T 2164.shp





Topo Map_T 2164

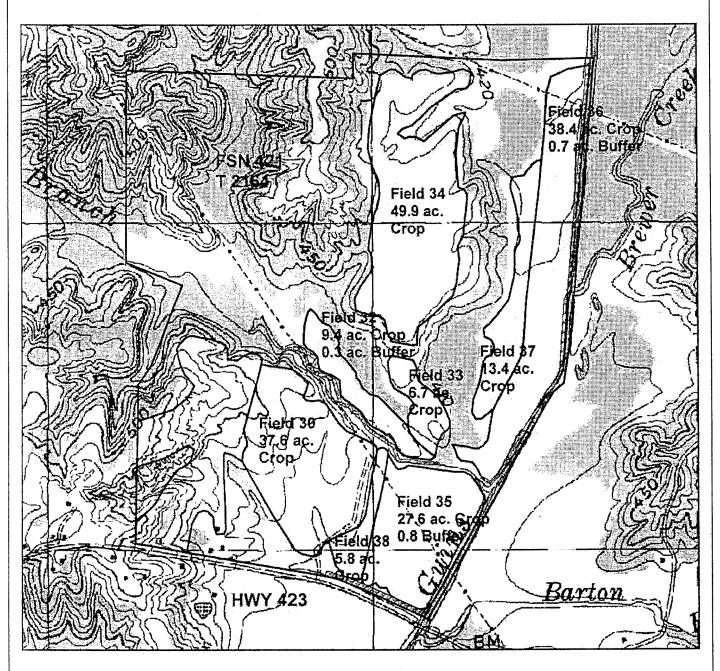
Date: 8/8/2007

Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

Field Office: HUNTINGDON SERVICE CENTER

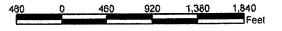
Agency: USDA-NRCS
Assisted By: Kevin M Hart
State and County: TN, CARROLL





30' Waterbody Buffer_T 2164.shp

50' Roads Buffer_T 2164.shp











Web Soil Survey 2.0 National Cooperative Soil Survey

Map unit symbol	Map unit name	Railing	Acros In AOI	Percent of AOI
Ca .	Calloway silt loam	¢ .	14.3	2.8%
Co	Coffins sill loam. occasionally flooded	C	16.1	3.2%
Fo .	Faloya silt loam, occasionally flooded	0	145.8	29.0%
G/B	Grensda silt toam, 2 to 5 percent slopes	c	3.8	0.8%
GC3	Grenada sitt loam, 5 to 8 percent slopes, severely eroded	C	4.9	.1.0%
LeB	Lexington silt loam, 2105 percent slopes	8	44.3	8.5%
LeC2.	Lexington slit loam. 5 to 3 percent slopes. eroded	8:	55.3	11.0%
LeD2	Lexington sit form, 8 to 12 percent slopes, eroded	В	45.2	9.0%
SmO2	Smithdale fine sandy loam, 8 to 12 percent slopes, eroded	8	20.9	4.2%
SmE	Smithdale fine sandy loam, 12 to 20 percent slopes	8	53.6	10.7%
Sm∈3	Smithdale fine sandy loarn, 12 to 20 percent slopes, severely eroded	8	12.6	2.5%
Us	Udorthents-Smilhdale complex, pullied	c ····	17.5	3.5%
Wo	Waverty sill loam, occasionally flooded	D	68.4	13,69
		<u> </u>	502.7	100.0%

2007 CNMP_T 5590

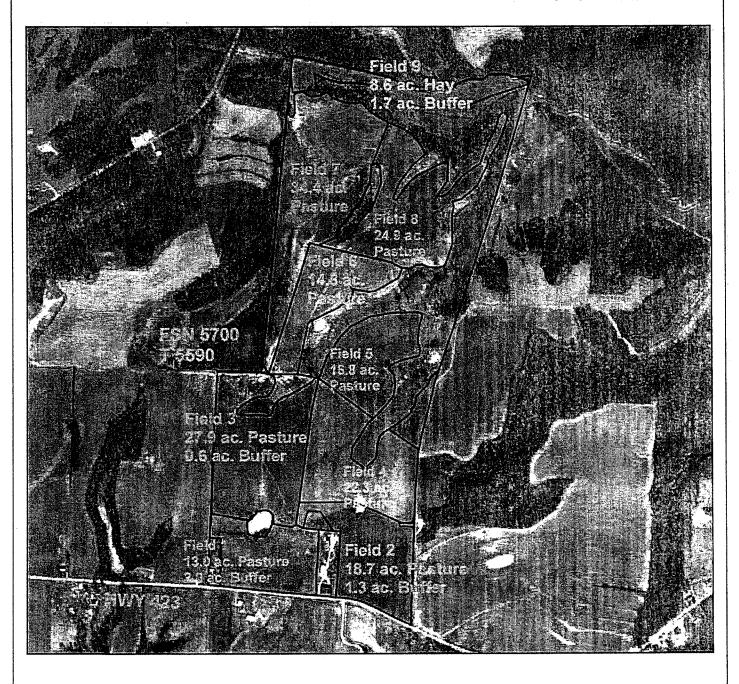
Date: 8/8/2007

Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

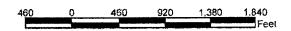
Field Office: HUNTINGDON SERVICE CENTER

Agency: USDA-NRCS
Assisted By: Kevin M Hart
State and County: TN, CARROLL





Legend





Buffers Map_T 5590

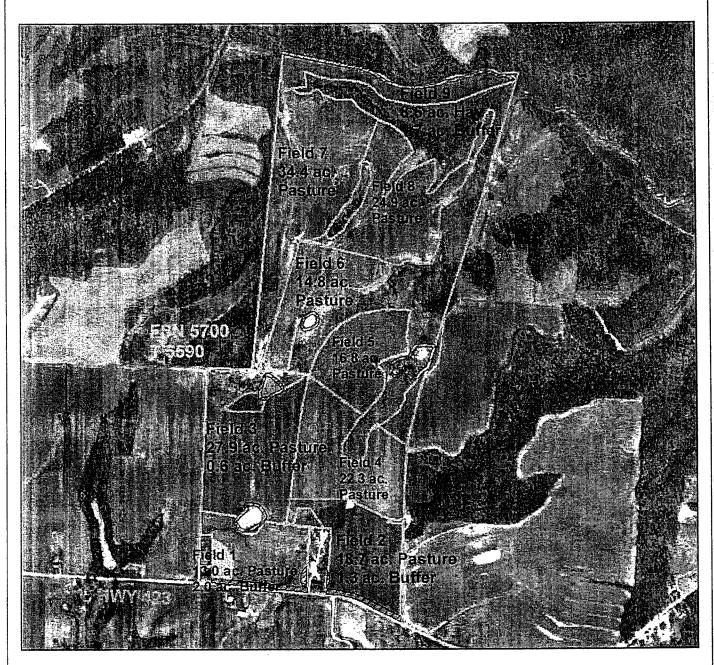
Date: 8/8/2007

Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

Field Office: HUNTINGDON SERVICE CENTER

Agency: USDA-NRCS
Assisted By: Kevin M Hart
State and County: TN, CARROLL



Legend

2 150' Well Buffer_T 5590.shp

30' Waterbody Buffer_T 5590.shp

300' Dwelling Buffer_T 5590.shp

50' Road Buffer_T 5590.shp







Topo Map_T 5590

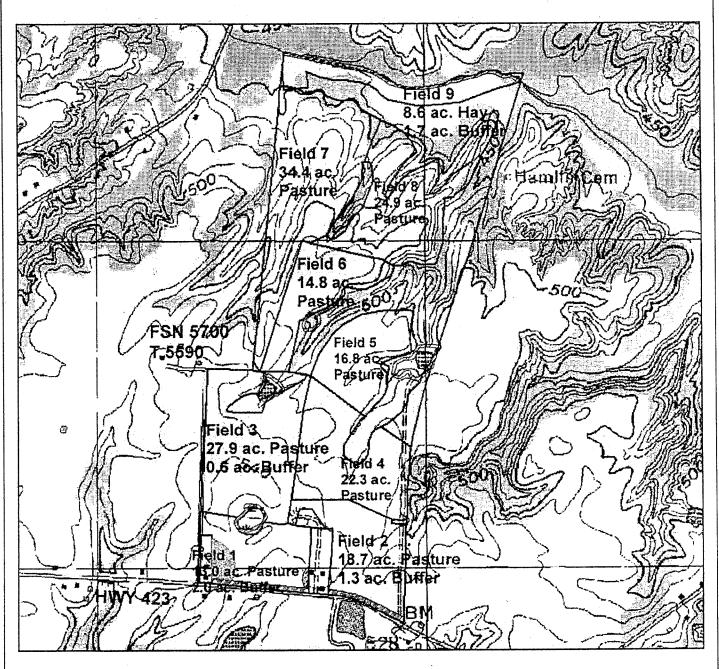
Date: 8/8/2007

Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

Field Office: HUNTINGDON SERVICE CENTER Agency: USDA-NRCS Assisted By: Kevin M Hart

State and County: TN, CARROLL



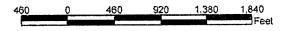


150' Well Buffer_T 5590.shp

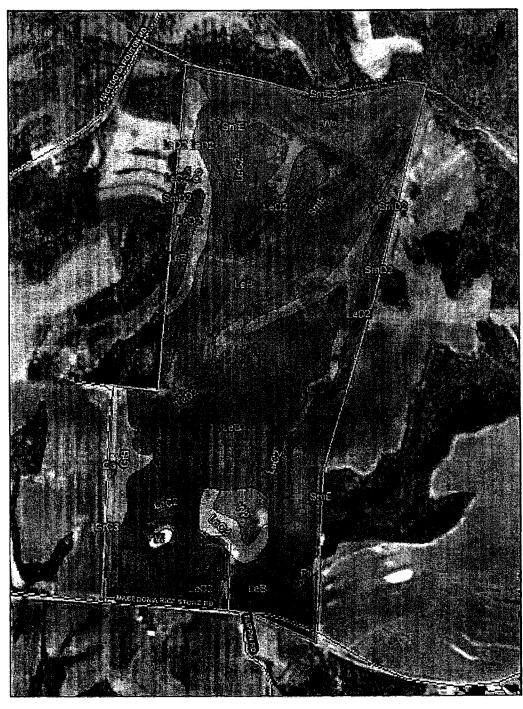
30' Waterbody Buffer_T 5590.shp

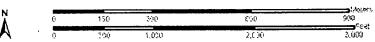
300' Dwelling Buffer_T 5590.shp

50' Road Buffer_T 5590.shp











2007 CNMP_T 6895

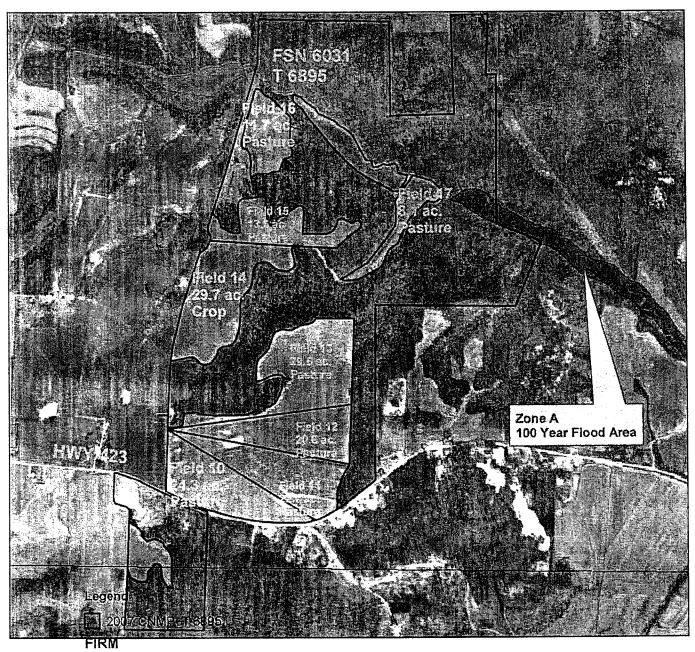
Date: 8/8/2007

Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

Field Office: HUNTINGDON SERVICE CENTER

Agency: USDA-NRCS Assisted By: Kevin M Hart State and County: TN, CARROLL









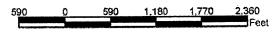














Buffers Map_T 6895

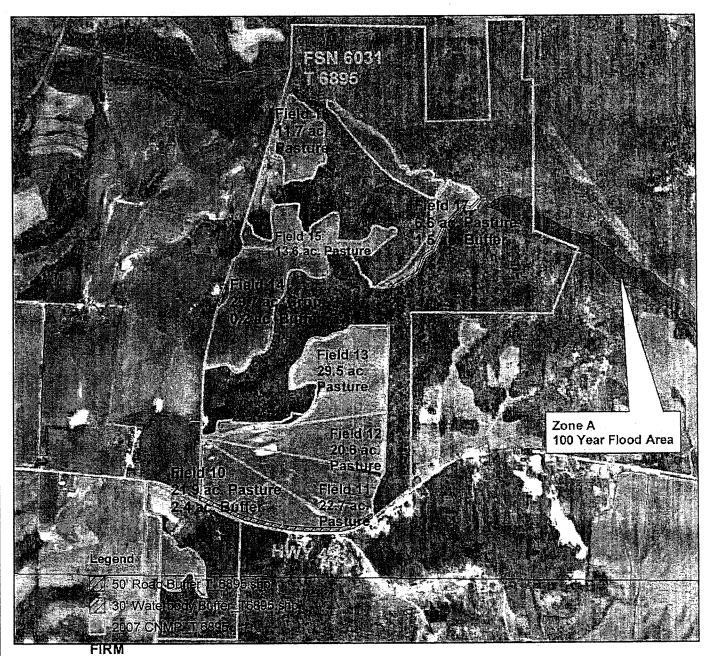
Date: 8/8/2007

Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

Field Office: HUNTINGDON SERVICE CENTER Agency: USDA-NRCS

Assisted By: Kevin M Hart
State and County: TN, CARROLL



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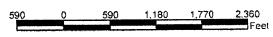
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X500

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AUG 1 9 2009

Permit Section





Topo Map_T 6895

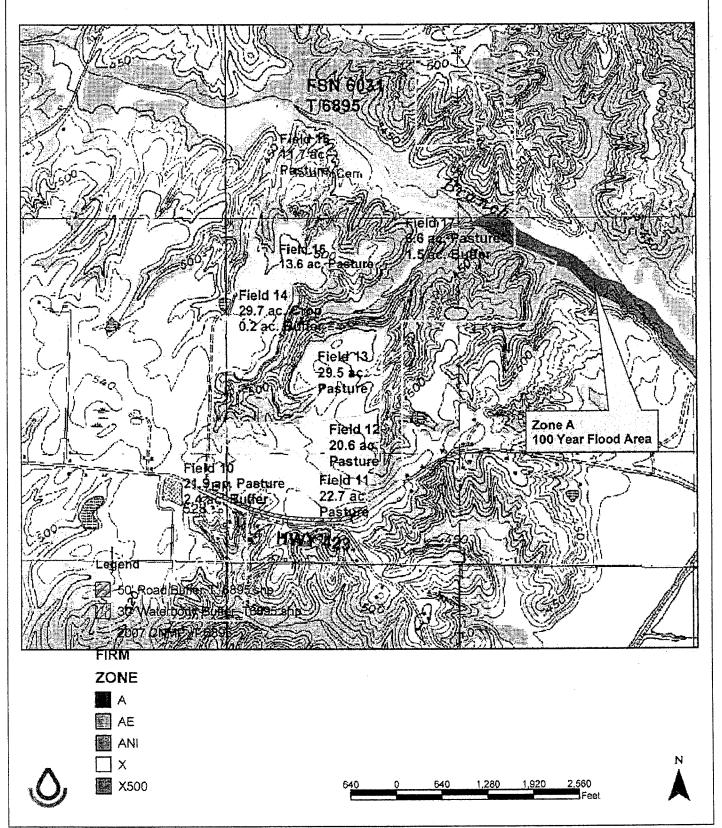
Date: 8/8/2007

Customer(s): JERRY BURCHAM

District: CARROLL COUNTY SOIL CONSERVATION DISTRICT

Field Office: HUNTINGDON SERVICE CENTER

Agency: USDA-NRCS
Assisted By: Kevin M Hart
State and County: TN, CARROLL





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		*			
etanakanaka	lydrologic Soll Group— S	winning by Map Unit	Carroll County, Tempesse		
Map linli xymbol	Magunii nama	Rating	Agres in AOI	Percent of AOI	
20	Collins sit toem.	C	9.4	1.9%	
	occesionally flooded				
·8	Falsiya silk toath, occasionally flooded	ָם בּ	593	12,1%	
. ►B	Lexington silt loam, 2 to 5 percent slopes	В	130.0	26.6%	
LeC2	Lexington six loam, 510 6 percent stopes eroded	В	87.8	13.8%	
LeD2	Lexington sit form, 8 to 12 percent slopes,	8	13.6	⊋,6%	
	eroded				
SmD2	Smithdale fine sandy loam, \$10.12 percent	B	16,7	3,4%	
	slopes eroded				
\$m€	Smithdale line sandy loam, 12 to 20 percent	8	115.5	23.6%	
	slopes .			3.44	
SmE3	Southdale fine sandy loam, 12 to 20 percent stopes, severally groded	B .	11.5	2,3%	
Bw€3	Sweatmen loam, 12 to 20 percent slopes, severely eroded	a.	5.5	1.1%	
Us	Udorthents-Smithdate complex, guilled	C	18.5	3.5%	
₩	Water		3.1	0.6%	
V q.	Waverly sill toem, occasionally flooded	D	38.4	7,6%	
		4	i		i
Totals for Area of Interes	R (AOI)		489.5	100.0%	I

3. LAND AND TREATMENT PRACTICES

This element addresses evaluation and implementation of appropriate conservation practices on sites proposed for land application of manure and organic by-products from an Animal Feeding Operation. On fields where manure and organic by-products are applied as beneficial nutrients, it is essential that runoff and soil erosion be minimized to allow for plant uptake of these nutrients.

3.1. LAND TREATMENT PRACTICES AND EXPECTED RESULTS

Fields where nutrients are applied will be managed to soil loss tolerance. Necessary conservation practices have been, or will be, established and maintained on cropland where animal by-products are applied before the first application. All fields need a field border, residue management, as well as vegetative field strips established when next to a ditch, stream, or wetlands. Refer to the conservation plan for practices beyond those proscribed in the Phosphorus Risk Index. For further information concerning the applied or planned Land Treatment Practices, see the Conservation Plan for the Producer operation located in the Carroll County NRCS Field Office. The following are planned practices for the CNMP for this farm:

Planned Land Treatment and Description	Fields	Date Planned
Forage Harvest Management (511) On these fields,	Tract 954 (1, 2, 3, 4)	2008, 2009,
forages will be harvested at the appropriate growth stages to provide the desired forage quality and to maintain the forage stand.	Tract 5590 (9)	2010
Prescribed Grazing (528) The vegetation on the	Tract 5590 (1, 2, 3, 4, 5,	2008, 2009,
pastures will be managed via controlled harvest with	6, 7, 8)	2010
grazing animals.	Tract 6895 (10,11,12,13,	
	15, 16, 17)	
Residue Management (344) - Residue from crop	Tract 1910 (24)	2008, 2009,
harvesting will be managed on the fields in order to	Tract 1913 (24, 26)	2010
minimize soil erosion.	Tract 2157 (1, 2, 3, 4)	
	Tract 2164 (30, 32, 33,	
	34, 35, 36, 37)	
	Tract 6895 (14)	

3.1.1. Plan for Establishing Vegetation

Vegetation establishment is required around the buildings and storage structures to reduce soil erosion, this offsite nutrient and pathogen transport.

All disturbed areas including slopes of pads will be planted to permanent vegetation. If construction occurs during seasons not suited for planting warm or cool season grasses, temporary vegetation will be established until the recommended planting dates. Refer to NRCS practice standard 342, Critical Area Treatment, for guidance.

4. NUTRIENT MANAGEMENT

The goal of this section is to develop a nutrient budget for nitrogen, phosphorus, and potassium that includes all nutrient sources. From this nutrient budget, projections will be made concerning the sustainability of the plan for the entire crop sequence. In most cases, the nutrient budget is accurate for the first year only. If nutrients from sources not included in this plan are used in the first year, the nutrient budget will be revised to account for those inputs. In subsequent years considered in this plan, a nutrient budget will be developed using current soil analysis data; current manure analysis data; the actual crops to be used and their projected yields and nutrient needs and will account for nutrients from all sources. Guidance in developing a nutrient budget may be obtained from your NRCS Field Office or your University of Tennessee Cooperative Extension Service Agent. Land application procedures must be planned and implemented in a way that minimizes potential adverse impacts to the environment and public health.

4.1. SOIL TESTING

Soil testing should occur as recommended in Table 4. Soil nutrient levels should be monitored by soil testing to determine the requirement or buildup of phosphorus and potassium in the soil.

Table 4:	Recommended	Soil Testing	Frequency
----------	-------------	---------------------	-----------

Land Use	Frequency (in years)
Continuous row crops (conventional)	2-3
Double-cropping system	2
Continuous No-till Corn, Cotton, Tobacco	1-2
Continuous No-till Soybeans (only)	3-5
Hay Systems	2
Pasture	3-5
High value Cash Crops (tobacco, vegetables)	annually
Lawns, Gardens	3-5
Any time a nutrient problem is suspected	Per event
At the beginning of a different cropping rotation	Per event

Soil samples are to be collected in accordance with The University of Tennessee extension service guidance (UT PB 1061) or standard industry practice if accepted by The University of Tennessee.

Soil testing is to be performed by laboratories that are accepted in one or more of the following programs:

- 1. State Certified Programs
- 2. The North American Proficiency Testing Program (Soil Science Society of America)
- 3. Other laboratories whose test results and interpretations of such test are within the currently accepted guidelines of The University of Tennessee

Soil profile sampling for nitrogen, Pre-Sidedress Nitrogen Test (PSNT) (UT SP427 for corn), Pre-Plant Soil Nitrate (PPSN) or soil surface sampling for phosphorus or acidity 22 may be necessary in situations where there are special production or environmental concerns.

Soil amendments shall be applied to adjust pH to specific range of the crop for optimum utilization of nutrients as per soil test recommendations.

MANURE ANALYSIS

The producer shall be responsible for having representative samples of the manure collected and analyzed at least once per year. The amount of manure to be land applied so that the permitted application rate (normally the agronomic rate) is met will be determined using a rolling average of the previous analyses. The documentation must be maintained for at least five years, longer if it relates to a USDA program. These analyses are part of the required Record Keeping and are stored under the Record Keeping element of this CNMP.

When collecting a manure sample from a storage facility, the most important thing to keep in mind is to collect a sample representative of what will be land applied to the crop. If a livestock operation has more than one storage facility (e.g. two separate manure storage buildings) each unit should be sampled separately (e.g. the producer will need to collect two samples, one to represent each manure type, liquid sample and a solid sample).

4.1.1. Manure Sampling Method

The sample sent to the lab from a manure storage building should be a composite of several subsamples. Sub-samples should be obtained from about 10 locations within the manure pile. The sample locations should vary by depth (from 1 ft deep to 3 inches from the bottom) and by position (from the front, back and sides). After collecting the sub-samples, the material should be mixed in one container to make a homogeneous composite sample. The composite sample sent to the lab should be about one pint. It should be sent in a well-sealed container. Sealable plastic bags work well for relatively dry material, wide mouthed plastic bottles are better for wetter material.

4.2. PHOSPHORUS INDEX (P INDEX)

When the soil test report recommends no application of P2O5 to the crop and a nitrogen-based application rate is needed, the Tennessee Phosphorus Index (P Index) used to assess further applications of P2O5. The P Index is an assessment tool used to evaluate the potential for P movement from the land application area. The following table shows the P Index point system and the generalized interpretation the points.

Total Points	
<100	LOW potential for P movement from the field. If farming practices are maintained at the current level there is a low probability of an adverse impact to surface waters from P losses.
	Nitrogen-based nutrient management planning is satisfactory for this site. Soil P levels and
	P loss potential may increase in the future due to N based nutrient management.
100 - 200	MEDIUM potential for P movement from the field. The chance for adverse impact to surface waters exists. Nitrogen-based nutrient management planning may be satisfactory for this field when conservation measures are implemented to lessen the probability of P loss. Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
201 - 300	HIGH potential for P movement from the field. The chance for adverse impact to surface waters is likely unless remedial action is taken. Soil and water conservation practices are necessary (if practical) to reduce the risk of P movement and water quality degradation. If risk cannot be reduced, then a P-based nutrient management plan will be implemented.
>300	VERY HIGH potential for P movement from the field and an adverse impact on surface waters. All necessary soil and water conservation practices, plus a P-based nutrient management plan must be put in place to avoid the potential for water quality degradation.

The P Index also requires certain setbacks, or buffers, be used on fields where manure will be applied to limit the potential affect of phosphorus on nearby water sources. The table below lists the buffer widths used in this plan.

	Buffer Widths	
Object/Site	Situation	Buffer Width (ft)
Well	Located up-slope of application site.	150
Well	Located down-slope of application site provided conditions warrant application.	300
Waterbody/Stream¹	Predominate slope < 5% with good vegetation. ²	30
Waterbody/Stream1	Predominate slope 5- 8% with good vegetation. ²	50
Waterbody/Stream1	Poor vegetative cover or Predominate slope > 8%²	100
Waterbody/Stream¹	Cultivated land, low erosion.	30
Public Road	Irrigated wastewater.	50
Public Road	Solid applied with spreader truck.	50
Dwelling	Other than producer.	300
Public Use Area	All.	300
Property Line	Located down-slope of application site.	30

Notes:

- Water bodies include pond, lake, wetland, or sinkhole. "Open" sinkholes should be protected the same as a well. Where sinkholes are not "open," a buffer should be established in the flat area around the rim of the basin.
- ² Good vegetation refers to a well-managed, dense stand that is not overgrazed.

Table 5: Tennessee Phosphorus Index Risk Rating Report

Operation	Operation Name: Jerry Burcham	v Burchs	m.									:					
						Tenne	nessee	Phosphoru	ıs Index Ri	ssee Phosphorus Index Risk Rating Report	eport						
			Dhoer	Phoenhous Source Characteristics	Charac	teristics			Ą	Phosphorus Transport Characteristics	port Chara	cteristics	10110				
-			r sour	pilotas soui	200	collection of						Erosio	Erosion Potential				
Tract	Field	Soil	MAX P205 Annl	MAX P205 Appl	P2O5 Appli	Appl	Appl	Hydrologic Soil Group	Perm. Vegetative Buffer	Non-App. Width from Surface	Slope	Cover	Texture	Length of Horizontal	Site Vulner-	PI Rating	Control
Number	Number	۵.	Rate (lbs/ac)	(th gal	ed As	BUILLI BU	Method		Width	Conveyance	<u> </u>			slope	ability	Value	
054	-	Σ	284	35.9	2	2	-	В	>29	>29	2-5	3	3	150	Medium	200.4	z
954	2	I	264	33.4	2	2	1	m	>29	>29	2-5	3	3	150	Medium	200.4	z:
954	1 60	_	294	37.2	2	2	-	В	>29	>29	5 - 12	ည	-	150	Medium	200.4	z
954	4	Σ	284	35.9	2	2	-	В	>29	>29	2-5	m (m (150	Medium	4.002	zz
954	2		294	37.2	2	2	_	£	>29	>29	2-5		2	120	Modium	100.4	2 2
1910	24	≥	63	8.0	2	3	-	В	×10	>29	2-5	7	7 0	300	Medium	100 5	2 2
1913	25		93	11.8	2	2	-	В	<10	>29	2-5	7	7	001	Medium	2000	z
1913	26		114	14.4	2	2	-	В	×10	>29	2-5	2	7	3	Medium	2007	2 2
2157	-		294	37.2	2	2	-	В	>29	>29	5 - 12	4		150	Medium	4.002	z
2164	30	_	114	4.4	2	2	1	В	<10	>29	5 - 12	4	1	150	Medium	7.007	Z
2164	32	Σ	104	13.2	2	2	1		20 - 29	>29	0-2	2	-	150	Medium	7007	z
2164	33	Σ	104	13.2	2	2	1	၁	10 - 19	>29	2-5	2	2	150	Medium	2007	z
2164	34	Σ	132	16.7	2	2	1	В	10 - 19	>29	2-5	2	2	300	Medium	2007	z
2164	35	Σ	104	13.2	2	2	1	٥	20 - 29	>29	0-2	2	-	300	Medium	2002	z
2164	36		114	14.4	2	2	1	٥	20 - 29	>29	0-2	2	-	300	Medium	2007	z
2164	37		114	14.4	2	2	_	Ω	20 - 29	>29	0-2	2	-	150	Medium	2007	z
5590	-	F	163	20.6	2	-	-	В	10 - 19	>29	2-5	3	2	150	Medium	200.7	2 2
5590	2		124	15.7	2	-	ļ	В	<10	>29	2-5	3	2	150	Medium	2007	2 2
5590	3		124	15.7	2	-	-	В	<10	>29	2-5	3	2	150	Medium	200.2	2 2
5590	4		124	15.7	2	-	_	В	<10	>29	2-5	3	2	150	Medium	2002	z
5590	٠.	≥	114	14.4	2	_	-	В	<10	>29	2-5	3	2	150	Medium	200.2	z
5590	9		124	15.7	2		-	8	<10	>29	2-5	3	2	150	Medium	7007	2 2
5590	7	Σ	114	14.4	2	1	1	ш	<10	>29	2-5	3	2	150	Medium	7.007	ZZ
5590	8	_	124	15.7	2	-	τ-	В	<10	>29	2-5		7	130	Medium	200.2	z
5590	6	_	124	15.7	2	-	1	Δ	20 - 29	>29	0-2	20	_	001	Mediaili	2002	2 2
6895	10	Σ	114	14.4	2	1	1	В	<10	>29	2-5	3	7	150	Medium	7.007	2 2
6895	1	-	124	15.7	2	1	-	В	<10	>29	2-5	e (2	150	Medium	2002	zz
6895	12	٦	124	15.7	2	-	1	В	<10	>29	2-5	8	2	061	Medium	2007	2 2
6895	13		124	15.7	2	1	_	В	<10	>29	2-5		7	061	Medium	7.007	2 2
6895	14	-	124	15.7	2	1	-	В	<10	>29	2-5	3	7	150	Medium	2002	z
6895	15	-	124	15.7	2	1	-	В	<10	>29	2-5	3	.7	150	Medium	200.2	zz
6895	16	-	124	15.7	2	-	-	В	c10	>29	2-5	3	2	150	Medium	200.2	2 2
6895	17	-	124	15.7	2	-	-	۵	20 - 29	>29	0-2	3		(۵	Medium	Z00.6	2

Tennessee Phosphorus Index Risk Rating Report (Continued)

Controlling Nutrient N = Nitrogen 3*P = 3*Phosphorus 2*P = 2*Phosphorus P = Phosphorus No Man. = No manure123	Application Method 1 = Injected 2 = Incorporated within 5 days of application 3 = Incorporated more than 5 days after application 4 = Surface applied (no incorporation)	
Cover 1 = Bare soil or conventional tillage 2 = No-till row-crops with light to medium residue 3 = Pasture/Hay or No-till row-crops with heavy residues 4 = No-till row-crops with heavy festidues 5 = Pasture/Hay	Texture 1 = All Textures 2 = Sit Ioam (West TN) 3 = Sit Ioam 4 = other	
SoilTest P / Site Vulnerability L = Low M = Medium H = High VH = Very High	P2O5 Applied As 1 = 0.20 applied As 1 = 0.20 applied as commercial fertilizer 2 = 0.10 applied as litter, manure, or biosolids 3 = 0.05 applied as alum to swine manure @ 200 lbs per 1000 sq. ft. rate 4 = 0.02 applied as alum to swine manure @ 200 lbs per 1000 sq. ft. rate Application Timing 1 = June - Sept. 2 = April, May, Oct, Mar or Nov. w/winter cover 3 = March or Nov. w/o winter cover, Feb w/ winter cover 4 = Dec, Jan, Feb	

4.3. MANURE APPLICATION PLAN

4.3.1. Application Fields Summary

Available land for manure application includes the following tracts and fields listed in the Table below. These fields are not included in any other Nutrient Management Plan and no other manure or compost is being applied to these fields.

Table 6: Application Fields Summary

Tract	Field	Acreage	Buffered*	Spreadable	Soil Test	* Pl Risk	Controlling
	Number		Acreage	Acreage	P	Rating	Nutrient
054	4	00.0	4	22.0	(lbs/acre)	MEDIUM	Nitrogen
954	11	26.9	4	22.9	18	MEDIUM	
954	2	6	2.1	3.9	40		Nitrogen Nitrogen
954	3	5.7	0.5	5.2	18	MEDIUM	
954	4	3.3	1.5	1.8	20	MEDIUM	Nitrogen
954	5	11.9	0.4	11.5	8	MEDIUM	Nitrogen
1910	24	28.9	0.8	28.1	24	MEDIUM	Nitrogen
1913	25	21.4	0	21.4	12	MEDIUM	Nitrogen
1913	26	4.8	1.5	3.3	16	MEDIUM	Nitrogen
2157	1	9.3	0	9.3	18	MEDIUM	Nitrogen
2157	2	4.7	0	4.7	0	Undetermined	Undetermined
2157	3	4.5	0.9	3.6	0	Undetermined	Undetermined
2157	4	3.8	2.5	1.3	0	Undetermined	Undetermined
2164	30	37.6	0	37.6	12	MEDIUM	Nitrogen
2164	32	9.7	0.3	9.4	28	MEDIUM	Nitrogen
2164	33	6.7	0	6.7	20	MEDIUM	Nitrogen
2164	34	49.9	0	49.9	24	MEDIUM	Nitrogen
2164	35	28.4	0.8	27.6	20	MEDIUM	Nitrogen
2164	36	39.1	0	39.1	18	MEDIUM	Nitrogen
2164	37	13.4	0	13.4	12	MEDIUM	Nitrogen
5590	1	15	2	13	40	MEDIUM	Nitrogen
5590	2	20	1.3	18.7	12	MEDIUM	Nitrogen
5590	3	28.5	0.6	27.9	18	MEDIUM	Nitrogen
5590	4	22.3	0	22.3	4	MEDIUM	Nitrogen
5590	5	16.8	0	16.8	28	MEDIUM	Nitrogen
5590	6	14.8	0	14.8	12	MEDIUM	Nitrogen
5590	7	34.4	0	34.4	24	MEDIUM	Nitrogen
5590	8	24.9	0	24.9	4	MEDIUM	Nitrogen
5590	9	10.3	1.7	8.6	12	MEDIUM	Nitrogen
6895	10	24.3	2.4	21.9	24	MEDIUM	Nitrogen
6895	11	22.7	0.3	22.4	4	MEDIUM	Nitrogen
6895	12	20.6	0	20.6	8	MEDIUM	Nitrogen
6895	13	29.5	0	29.5	8	MEDIUM	Nitrogen
6895	14	29.7	0.2	29.5	12	MEDIUM	Nitrogen
6895	15	13.6	0	13.6	4	MEDIUM	Nitrogen
6895	16	11.7	0	11.7	8	MEDIUM	Nitrogen
6895	17	8.1	1.5	6.6	4	MEDIUM	Nitrogen

4.3.2. Application Srategy

The tables below show the overall strategy of manure application during the CNMP planning period.

The application rates shown below are based on the recommended nitrogen application rates for crops using the University of Tennessee based fertility recommendation tool. The rates are also lower than the maximum values calculated using the P-Index (Table 5) The strategy of application for this plan is as follows:

2008 – Fall Apply manure to fields that are being converted to Bermuda from Fescue

2009 - Spring Apply manure to fields with residual value (hay, silage, grain)

2010 - Spring Apply manure to fields with residual value (hay, silage, grain)

2010 - Summer Apply manure to Bermuda fields

Supplemental fertilizer will be necessary on some fields, refer to the Nutrient Budget, Table 9, for estimates of the nutrients needed.

10 Strategies = 150,00							th gallons	a	th gallons
		Applicat	ion Plan - :	2008	Carryover Generated		in gallons		th pailons
4 N = 2 = E = - 1	Tract	Field			Dellerated	Allocation Rate	Allocation Amount	Allocation Rate	Allocation Amount
Allocation			Spreadable	Crop Name	Source	(th gallons/acre)	(thousand gallons)	(thosand gallons)	(thousand gallons)
Period Fall 2008	Number 5895	Number 11	Acreage 22.4	B	House 1	III gasorstacie)		(CIDESITO Senoro)	transaction America
				Bermudagrass, pasture		8.8			
Fall 2008	8895 6895	12 13	20.6	Bermudagrass, pasture	House 1	8.5			
Fall 2008	5895		29.5	Bermudagrass, pasture		0.0	239.13		88.
Fall 2008	38 9 5	14	29.5	Bermudagrass, pasture	House 2			- 3	40.
Fall 2008	5895	15	13.6	Bermudagrass, pasture	House 2				35.
Fail 2008	895	18	11.7	Bermudagrass, pasture	House 2			3	19.
Fall 2008	\$895	17	6.8	Bermudagrass, pasture	House 2		2.2.2.2	3	
Note: Manure o	offection sta	irts in March	2008 (10 mont)	ns @ 83.7 th galions/month = 837	th gallons)	Total uses		Total used	184. 652.
						Total Carryove	220.75	Total Carryover	502.
				!	ì		3		
8.19(星/精/翻)							ne 1004.4 (th gad)		
		Applicat	ion Plan - :	2009	Carryover		th gallons		th gallions
	*	Applicat	JOH FIEHT 2.	2005	Generated		th gallons		th gallons
Allocation	Tract	Field	Spreadable	Crop Name	Source	Allocation Rate	Allocation Amount	Allocation Rate	Allocation Amoun
Period	Number	Number	Acreage			(thesand gallons)	(thousand gallons)	(thosand gallons)	(thousand gallons
Spring 2009	£54	1	22.6	Cool Season Grass Mix, hay	House 2			4.5	
Spring 2009	95 4	3	5.2	Cool Season Grass Mx, hay	House 2			4.5	23.
Spring 2009	954	4	1.6	Cool Season Grass Mix, hay	House 2			4.5	8.
Spring 2009	954	5	11.5	Cool Season Grass Mix, hay	House 2			4.5	51.7
Spring 2009	1910	24	28.1	Scybeans, grain	House 2			6.5	182.6
Spring 2009	1913	25	21,4	Sovbeans, grain	House 2			8.5	
Spring 2009	1913	28	3.3	Soybeans, grain	House 2			B.5	28.0
Spring 2009	2164	34	49.9	Soybeans, grain	House 2			8,5	32
Spring 2009	2164	30	37.6	Soybeans, grain	House 1	7.3	282		
Spring 2009	2164	32	9,4	Soybeans, prain	House 1	7.1	70,5		
Spring 2009	2164	33	6.7	Soybeans, grain	House 1	7.			
······································		<u> </u>	L		1	Total use	402.75	Total used	717.
						Total Carryove		Total Carryover	939.
	*	1	1	§	1		31		· · · · · · · · · · · · · · · · · · ·
						House 1 - Volu	ne 1004.4 (th gal)	House 2 - Volun	se 1004.4 (th call
DOOR SERVICES ANSWERS COMME				***************************************	Carryover		th gallons		th palions
		Applicat	tion Plan - I	2010	Generated		th gallons		th pations
Allocation	Tract	Field	Spreadable	T .	1	Allocation Rate	Allocation Amount	Allocation Rate	Allocation Amoun
Period	Number	Number	Acreace	Crop Name	Source	(thosand gallons)	(thousand gallons)	(thosand gallons)	(thousand gallons
Spring 2010	2164	35	27.6	Com, sílage	House 1		165.6		
Spring 2010	2164	38	39.1	Com, silage	House 1		234.6		
Spring 2010	2164	37	13.4	Com, silage	House 1	<u> </u>	80.4		
Spring 2010	2157	1	9.3	Com, silage	House 1		55.8		
Summer 2010	8895	10	21.9	Bermidagrass, pasture	House 1	14.			<u> </u>
		11	22.4		House 1	14.			
Summer 2010	5895	17		Bermudagrass, pasture	House 1	14.			
Summer 2010			13.5	Bermudagrass, pasture		14.	131.2	15.5	319
Summer 2010	1895	12	20.8	Bermudagrass, pasture	House 2		 	15.5	
Summer 2010	8895	13	29.5 29.6	Bermudagrass, pasture	House 2		 	15.5	
Summer 2010	8895	14		Bermucagrass, pasture	iniocise 2				
						Total use		Total use:	
						Total Carryove	en 931.45	Total Carryove	710

4.4. CROP TYPES, REALISTIC YIELDS, SEQUENCES AND APPLICATION PERIODS

The following Table displays the crop type with their realistic yields based upon the historic data. The following crops, associated yields, and nutrient removal data are used to determine a nutrient budget based upon nutrient removal criteria.

Table 7: Crop Type, Yield Goals, and Removal Rates.

Tract	Field	Grop Name	Expected		ent Rem (lb/ac)	
Hace	Number	STOP TURNS	Yield	30.00.00.00.00.00.2	P	
954	1	Cool Season Grass Mix, hay	3 Tons	39.5	4.1	40
954	2	Cool Season Grass Mix, hay	3 Tons	39.5	4.1	40
954	3	Cool Season Grass Mix, hay	3 Tons	39.5	4.1	40
954	4	Cool Season Grass Mix, hay	3 Tons	39.5	4.1	40
954	5	Cool Season Grass Mix, hay	3 Tons	39.5	4.1	40
1910	24	Corn, silage	20 Tons	8.7	1.3	10.5
1910	24	Soybeans, grain	35 Bushels	3.8	0.38	1.1
1913	25	Corn, silage	20 Tons	8.7	1.3	10.5
1913	25	Soybeans, grain	40 Bushels	3.8	0.38	1.1
1913	26	Corn, silage	20 Tons	8.7	1.3	10.5
1913	26	Soybeans, grain	40 Bushels	3.8	0.38	1.1
2157	1	Corn, silage	20 Tons	8.7	1.3	10.5
2164	30	Corn, silage	20 Tons	8.7	1.3	10.5
2164	30	Soybeans, grain	40 Bushels	3.8	0.38	1.1
2164	32	Corn, silage	20 Tons	8.7_	1.3	10.5
2164	32	Soybeans, grain	40 Bushels	3.8	0.38	1.1
2164	33	Corn, silage	20 Tons	8.7	1.3	10.5
2164	33	Soybeans, grain	40 Bushels	3.8	0.38	1.1
2164	34	Corn, silage	20 Tons	8.7	1.3	10.5
2164	34	Soybeans, grain	40 Bushels	3.8	0.38	1.1
2164	35	Corn, silage	20 Tons	8.7	1.3	10.5
2164	35	Soybeans, grain	40 Bushels	3.8	0.38	1.1
2164	36	Corn, silage	20 Tons	8.7	1.3	10.5
2164	36	Soybeans, grain	40 Bushels	3.8	0.38	1.1
2164	37	Corn, silage	20 Tons	8.7	1.3	10.5
2164	37	Soybeans, grain	40 Bushels	3.8	0.38	1.1
5590	1	Bermudagrass, pasture	8 Tons	37.5	3.8	28
5590	2	Bermudagrass, pasture	8 Tons	37.5	3.8	28
5590	3	Bermudagrass, pasture	8 Tons	37.5	3.8	28
5590	4	Bermudagrass, pasture	8 Tons	37.5	3.8	28
5590	5	Bermudagrass, pasture	8 Tons	37.5	3.8	28
5590	6	Bermudagrass, pasture	8 Tons	37.5	3.8	28
5590	7	Bermudagrass, pasture	8 Tons	37.5	3.8	28
5590	8	Bermudagrass, pasture	8 Tons	37.5	3.8	28

Tract	Field	Crop Name	Expected	Nutr	ent Rem (lb/ac)	oval
	Number		Yield	N	Р	ΚŤ
5590	9	Bermudagrass, hay/silage	8 Tons	37.5	3.8	28
6895	10	Bermudagrass, pasture	8 Tons	37.5	3.8	28
6895	10	Corn, silage	20 Tons	8.7	1.3	10.5
6895	11	Bermudagrass, pasture	8 Tons	37.5	3.8	28
6895	11	Corn, silage	20 Tons	8.7	1.3	10.5
6895	12	Bermudagrass, pasture	8 Tons	37.5	3.8	28
6895	12	Corn, silage	20 Tons	8.7	1.3	10.5
6895	13	Bermudagrass, pasture	8 Tons	37.5	3.8	28
6895	13	Corn, silage	20 Tons	8.7	1.3	10.5
6895	14	Bermudagrass, pasture	8 Tons	37.5	3.8	28
6895	14	Corn, silage	20 Tons	8.7	1.3	10.5
6895	15	Bermudagrass, pasture	8 Tons	37.5	3.8	28
6895	15	Corn, silage	20 Tons	8.7	1.3	10.5
6895	16	Bermudagrass, pasture	8 Tons	37.5	3.8	28
6895	16	Corn, silage	20 Tons	8.7	1.3	10.5
6895	17	Bermudagrass, pasture	8 Tons	37.5	3.8	28
6895	17	Corn, silage	20 Tons	8.7	1.3	10.5

The following table displays the targeted periods of the year when manure should be applied to specific crops. Manure may be applied during other periods, but with less benefit to production and only when environmental affects of manure application are considered to be minimal.

Table 8: Expected Application Periods by Crop*

2				recess 1		: Mo	nth	\$ 19 (47)	: 34			
Crop	Jan	Feb	Mar.	Apr	May	Jun	Jul	· Aug.	Sep	Oct	Nov	Dec
Fescue Pasture/Hay			х	Х	Х	х			Х	Х	Х	
Bermudagrass Pasture/Hay					х	Х	Х	х			,	
Corn or Sorghum Silage			Х	Х	х	Х						
Soybeans			Х	Х	X	Х						

4.5. PLANT TISSUE TEST RESULTS

If allocation decisions are based upon the results of such testing, the producer needs to document the rationale for changing the application rates and maintain all such documentation to support the soundness of such a decision. The results of tissue testing need to be included in the Record Keeping element of the CNMP and retained by the producer for five (5) years.

4.6. APPLICATION REQUIREMENTS

The Nutrient Allocation Schedule (below) shows allocation dates, application equipment used, and timing of incorporation. Specific dates and nutrient/manure amounts referenced throughout this document are estimates and are intended only to guide the producer in his application strategy. The schedule and nutrient budget indicate that there is not enough manure to adequately meet the nutrient needs of all the fields on the various tracts. Commercial fertilizer will be needed to supplement the manure applied to fields. The allocation rate has been determined based on UT fertility recommendations.

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4.7. NUTRIENT ALLOCATION SCHEDULE, AND BUDGETS (N, P2O5 AND K20)

The following schedule is an estimate and represents data output from the program Afopro. The application information provided in section 4.3.2 should be used for manure application planning. This table is intended to show the source of information provided in the application strategy section.

Table 9: Nutrient Allocation Schedule, and Budgets (N, P2O5 and K20)

Trans Alo	Cron Nama	- Cro	Diant **	- Rec	* Recommended	ha	ď	Preallocation	Ju C	Mai	Manure (Ib/ac)	ac)	Balar	Balance (Ib/ac)	c) 📑
Field No	Cich Name	Yield			(lb/ac)	}	: 5	Credits (lb/ac)	(C)						
Spr. Acres				z	.P205	K20	N	P205 K20	20	N	P205	K20	200	io.	.K20
1910	Com. silage	20 Tons	4/1/2008	150	8	240	0	0	0	0	0	0	-150	₽ P	-240
24	Soybeans, grain	35 Bu.	5/15/2009	140	22	80	0	0	0	132	150	136	œ٩	130	22
28.1	Corn. silade	20 Tons	4/1/2010	150	80	240	0	0	0	0	0	0	-150	æ	-240
			Totals	440	180	260	0	0	0	132	150	136	-308	ę,	-424
1913	Corn. silage	20 Tons	4/1/2008	150	160	240	0	0	0	0	0	0	-150	-160	-240
25	Sovbeans, grain	40 Bu.	5/15/2009	180	8	8	0	0	0	173	196	178	-,	156	86
21.4	Corn. silage	20 Tons	4/1/2010	150	160	240	0	0	0	0	0	0	-150	-160	-240
			Totals	480	360	560	0	0	0	173	196	178	-307	-164	-382
1913	Corn silage	20 Tons	4/1/2008	150	160	240	0	0	0	0	0	0	-150	-160	-240
26	Sovbeans grain	40 Bu.	5/15/2009	180	8	80	0	0	0	173	196	178	-2	156	86
3.3	Corn silade	20 Tons	4/1/2010	150	160	240	0	0	0	0	0	0	-150	-160	-240
			Totals	480	360	260	0	0	0	173	196	178	-307	-164	-382
							-								
2157	Corn. silade	20 Tons	4/1/2008	150	160	160	0	0	0	0	0	0	-150	-160	-160
	Corn. silade	20 Tons	4/1/2009	150	160	160	0	0	0	0	0	0	-150	-160	-160
9.3	Corn. silage	20 Tons	4/1/2010	150	160	160	0	0	0	142	47	107	æρ	-113	-53
	1		Totals	450	480	480	0	0	0	142	47	107	-308	-433	-373
2164	Corn. silade	20 Tons	4/1/2008	150	160	240	0	0	0	0	0	0	-150	-160	-240
30	Sovbeans, grain	40 Bu.	5/15/2009	180	40	80	0	0	0	180	29	134	0	19	54
37.6	Corn silage	20 Tons	4/1/2010	150	160	240	0	0	0	0	0	0	-150	-160	-240
			Totals	480	360	260	-	0	0	180	59	134	-300	-301	-426
2164	Corn. silage	20 Tons	4/1/2008	150	8	240	0	0	0	0	0	٥	-150	₽ P	-240
32	Sovbeans grain	40 Bu.	5/15/2009	180	20	8	0	0	0	180	59	134	0	39	54
9.4	Corn. silage	20 Tons	4/1/2010	150	80	240	0	0	0	0	0	0	-150	8	-240
			Totals	480	180	560	0	0	0	180	59	134	-300	-121	-426
					1	1	1								

()	K20	-240	54	-240	-426	-240	25	-240	-423		-240	-80 -80	-133	-453	-160	4	-53	-253	-160	9	-53	-253	÷.	÷.	-34 -24	-102	-194	-194	-194	-582		-114	-114	-114	-342	
Balance (lb/ac)	P205	-80	39	-80	-121	8	130	-80	ဇ္		-80	-20	-33	-133	-160	40	-113	-313	-160	4	-113	-313	-29	-29	-29	-87	-109	-109	-109	-327		-109	-109	-109	-327	
Bala	Z	-150	0	-150	-300	-150	-48	-150	-348		-150	-180	9	-336	-150	-180	-6	-336	-150	-180	9-	-336	-355	-355	-355	-1065	-355	-355	-355	-1065		-355	-355	-355	-1065	
ı/ac)	K20	0	134	0	134	0	137	0	137		0	0	107	107	0	0	107	107	0	0	107	107	0	0	0	0	0	0	0	0		0	0	0	0	
Manure (Ib/ac)	*P205 K20	0	59	0	59	0	150	0	150		0	0	47	47	0	0	25	47	0	0	47	47	0	0	0	0	0	0	0	0		0	0	0	0	
Ma	z	0	180	0	180	0	132	0	132	5	0	0	144	144	0	0	144	144	0	0	144	144	0	0	0	0	0	0	0	0	_	0	0	0	0	
on ac)	K20	0	0	0	0	0	0	0	-	>	0	0	0	0	0	0	0	0	0	0	0	0	46	46	46	138	46	46	46	138		46	46	46	138	
Preallocation Gredits (Ib/ac)	. N. P205 K20	0	0	0	0	0	0	0		•	0	0	0	0	0	0	0	0	0	0	0	0	7	11	11	33	-	11	11	33		11	1	11	33	
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jed	K20	240	80	240	560	240	80	240	250	990	240	80	240	260	160	9	160	360	160	40	160	360	80	80	80	240	240	240	240	720		160	160	160	480	
Recommended (Ib/ac)	1		20	80	180	80	20	80	180	001	80	2	80	180	160	40	160	360	160	9	160	360	40	40	40	120	120	120	120	360		120	120	120	360	
Rec	Z	8	180	150	480	150	180	150	900	101	150	180	150	480	150	180	150	480	150	180	150	480	400	400	400	1200	400	400	400	1200		400	400	400	1200	
Plant Date		4/1/2008	5/15/2009	4/1/2010	Totals	4/1/2008	5/15/2009	4/1/2010	Totala	lotals	4/1/2008	5/15/2009	4/1/2010	Totals	4/1/2008	5/15/2009	4/1/2010	Totals	4/1/2008	5/15/2009	4/1/2010	Totals	5/1/2008	5/1/2009	5/1/2010	Totals	5/1/2008	5/1/2009	5/1/2010	Totals		5/1/2008	5/1/2009	5/1/2010	Totals	
Crop Yield		20 Tons	40 Bu.	20 Tons		20 Tons	40 Bu	20 Tons	2		20 Tone	40 Bit	20 Tone	2	20 Tons	40 Bu	20 Tons		20 Tons	40 Bu.	20 Tons	2	8 Tons		8 Tons		8 Tons					8 Tons				
Crop Name:		Corn silade		Corn silage		Corn. silage	Sovheans grain	Corn silane	Office all all all all all all all all all al		ore ellage	Coupone grain	Corn ellara	OB man	Corn silane	Sovheans grain	Com silane	Same in the	Com silane	Sovbeans grain	Corn silade	0800 1100	Bermuda, Pasture	Bermuda, Pasture	Rerminda Pastille		Bermuda, Pasture	Berminda Pastiire	Berminda Pactire	מבונים ו		Berminda Pasture	Rerminda Pacture	Bermida Pasture	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
TractiNo	Spr. Acres	2164		6.7			-	667			2464	25	27.6		2164	1 98			2164	37	13.4		5590		13		5590	2000	18.7			5500	200	27.9		

Tielda	CIOD Name	Zois Vieix	Date		(III)	Z.	່ວ	Credits (Ib/ac)							
Field NO Spr Acres		ומות	282	Z	P205	K20	Z	P205	K20	Z	P205	K20	N	P205	K20
apir Apira	Dormida Dacting	A Tone	5/1/2008		120	240	45	11		1	0	0	-355	-109	-194
2	Dormida Partire	R Tone	5/1/2009	400	120	240	45	7	46	0	0	0	-355	-109	-194
22.3	Bermida Pacture	A Tons	5/1/2010	400	120	240	45	+	46	0	0	0	-355	-109	-194
	הפוווחתמי ו מפוחוב	200	Totals	1200	360	720	135	33	138	٥	0	0	-1065	-327	-582
5500	Rerminda Pastiire	8 Tons	5/1/2008	400	8	80	45	1	46	0	0	0	-355	-69	45
2	Berminda Pacture	8 Tons	5/1/2009	400	8	80	45	=	46	0	0	0	-355	69-	-34
16.R	Berminda Pacture	8 Tone	5/1/2010	400	80	80	45	11	46	0	0	0	-355	69-	-34
	Deliliada, rastale	200	Totale	1200	240	240	135	33	138	0	٥	0	-1065	-207	-102
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0	Berminda Daetrira	8 Tone	5/1/2008	400	120	240	45	1	46	0	0	0	-355	-109	-194
0900 8	Berminda Pacture	8 Tons	5/1/2009	400	120	240	45	1	46	0	0	0	-355	-109	-194
14.8	Berminda Pasture	8 Tons	5/1/2010	400	120	240	45	11	46	0	0	0	-355	-109	-194
			Totals	1200	360	720	135	33	138	0	0	0	-1065	-327	-582
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00	Bermuda, Pasture	8 Tons	5/1/2008	400	120	80	45	11	46	0	0	5	ÇÇ-	60I-	4
7	Bermuda, Pasture	8 Tons	5/1/2009	400	120	80	45	Ξ	46	0	0	0	-355	-109	45
34.4	Bermuda, Pasture	8 Tons	5/1/2010	400	120	80	45	11	46	0	0	0	CC?-	-109	45
			Totals	1200	360	240	135	33	138	0	0	0	-1065	-327	-102
		Tong L	E/1/2008	707	120	160	45	=	46	0	0	0	-355	-109	-114
558U	Bermoda, Pasture	o Tong	5/1/2000	400	120	160	45	=	46	0	0	0	-355	-109	-114
0 24 9	Bermida Pacture	B Tons	5/1/2010	400	120	160	45	=	46	0	0	0	-355	-109	-114
	Deminada, i astalo		Totals	1200	360	480	135	33	138	0	٥	0	-1065	-327	-342
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00	Bermuda, hay	8 Tons	5/1/2008	400	120	240	0	٥	0	٥		0	400	-120	047-
6	Bermuda, hay	8 Tons	5/1/2009	400	120	240	٥		٥		> 0	2	201	120	-240
8.6	Bermuda, hay	8 Tons	5/1/2010	400	120	240	9	5	ء د	٥	- c	0	-1200	-360	-720
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6895 40	Dormindo Dortino	A Tone	9/15/2008	36	9 6	\$	45	=	46	0	0	0	-15	-29	9
21.0	Dermide Destine	Z Z	5/1/2009	400	e	160	45	=	46	0	0	0	-355	69-	-114
i,	Derminda Dacture	Tone	5/1/2010	80	08	160	45	£	46	347	115	260	9-	46	146
	Dellilluda, i astulc	200	Totals	1010	280	520	135	33	138	347	115	260	-528	-132	-122
36	Corn silane	20 Tons	4/1/2008	150	160	240	0	0	0	0	0	0	-150	-160	-240
2	Bermida Pasture	8 Tons	9/15/2008	09	88	80	45	11	46	204	29	152	189	-5	118
22.4	Bermida, Pasture	8 Tons	5/1/2009	400	120	240	45	11	46	0	0	0	-355	-109	-194 0
	Berminda Pasture	8 Tons	5/1/2010	400	120	240	45	11	46	347	115	260	8	إو	9

Crop Name Crop	Plant Recommended Date (Ib/ac)	C	Preal Credit	Preallocation Credits (lb/ac) N P205 K20		Manure ([5/ac)	(lb/ac) 5 K20	Bala	Balance (lb/ac) 	ac) K20
	202	**		2				:		
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9/15/2008	80	80	_	\dashv	7	_	152	189	-2	118
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	120	+	-	11	450 315	320	320	256	147	787
lotals 1010	084	200	62	+	╁	\downarrow	2	200	17	2
20 Tons 4/1/2008 150	160	240	0	0	0	0	0	-150	-160	-240
9/15/2008	-	80	<u> </u>	11	46 204	4 67	152	189	-2	118
8 Tons	120	240	45	11 4	46 0			-355	-109	-194
5/1/2010	400 120	240	45	11 4	H		-	-40	247	132
Totals	1010 480	800	135	33 1	138 519	9 423	478	-356	-24	-184
20 Tons 4/1/2008 1	150 160	240	0	0	0	0	0	-150	-160	-240
9/15/2008	ŀ	88	_			1 69	63	46	0	29
8 Tons 5/1/2009	400 120	240	45 '	11 4	46 0		+	-355	-109	-194
5/1/2010	400 120	240	45 '	11 4	46 315	Н	\dashv	4	247	132
Totals	1010 480	800	135	33 1	138 376	6 425	389	-499	-22	-273
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9/15/2008	╀	88	L	11	46 61	1 69	63	46	0	29
8 Tons 5/1/2009	400 120	240	45		46 0		\dashv	-355	-109	-194
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+	+	9,0	+	+	+			150	-160	-240
Corn, silage 20 1 ons 4/1/2008	90 190	7.40 80	45	7 -	46 61	+	93	46	0	29
8 Tons	ŀ	240	\vdash		┝	\vdash	0	-355	-109	-194
8 Tons	\vdash	240	-	11	46 0		0	-355	-109	-194
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	750	0,40					-	-150	-160	-240
ZU IONS	+	04 G	-			-	69	46	0	29
\dagger	ŀ	240	\perp	-	╁	+	0	-355	-109	-194
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ON ASSESSED	5-63					-,	 _	_		_	_	-	_			 			_	_
ac)	K20		0	0	0	٥	0	94	0	94		09-	34	ထု	-86	-30	64	-30	4	
Balance (Ib/ac)	P205		٥	0	٥	0	-90	44	-60	-76		-30	74	-30	14	09-	44	9	-76	
Bala	Ν		-90	-90	-90	-270	- 06-	4	-90	-184		-90	-4	-90	-184	-90	4	-90	-184	
(ac)	K20		0	0	0	0	0	94	0	94		0	94	0	94	0	94	0	94	
Manure (Ib/ac)	P205		0	0	0	0	0	104	0	104		0	104	0	104	0	104	0	104	
Mar	N		0	0	0	0	0	98	0	98		0	98	0	98	0	98	0	98	
on. ac)	K20		0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	
Preallocation Credits (Ib/ac)	N - P205		0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	
ئ <u>ت</u> ھا	z		0	0	0	0	0	0	0	0		0	0	0	0	0	О	0	0	
Jed	K20		0	0	0	0	0	0	0	0		09	9	90	180	30	30	30	90	
Recommended (lb/ac)	P205		0	0	0	0	09	09	9	180		30	30	30	8	90	09	09	180	
Rec	z		06	06	06	270	06	06	96	270		90	8	8	270	66	06	06	270	
Plant Date:			4/15/2008	2/15/2009	2/15/2010	Totals	4/15/2008	2/15/2009	2/15/2010	Totals		4/15/2008	2/15/2009	2/15/2010	Totals	4/15/2008	2/15/2009	2/15/2010	Totals	
Crop Yield			3 Tons	3 Tons	3 Tons		3 Tons	3 Tons	3 Tons			3 Tons	3 Tons	3 Tons		3 Tons	3 Tons	3 Tons		
Çrop Name		COST OF THE PROPERTY OF THE PR	Fescue, Hay	Fescue, Hay	Fescue, Hay		Fescue, Hay	Fescue, Hav	Fescue, Hav			Fescue, Hay	Fescue, Hav	Fescue, Hay		Fescue, Hav	Fescue, Hay	Fescue, Hay		
Tract No Field No	Spr. Acres		954	2	3.9		954	· 10	5.2			954	4	1.8		954		11.5		

5. OPERATION AND MAINTENANCE

This section addresses the operation and maintenance of the manure management system, conservation practices, manure/compost testing, and equipment calibration. Operation and maintenance of structural, non-structural, and land treatment measures requires effort and expenditures throughout the life of the practice to maintain safe conditions and assure proper functioning. Operation includes the administration, management, and performance of non-maintenance actions needed to keep a completed practice safe and functioning as planned. Maintenance includes work to prevent deterioration of practices, repairing damage, or replacement of the practice if one or more components fail.

5.1. ITEM SPECIFIC OPERATION AND MAINTENANCE

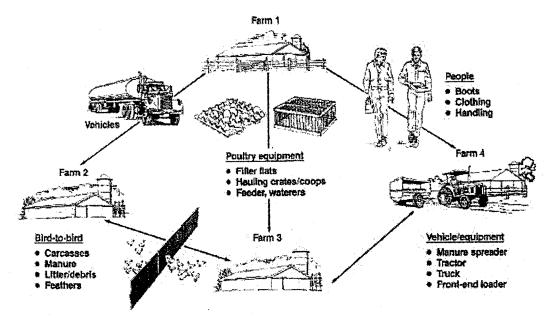
5.1.1. Manure Storage Operation and Maintenance Items

Waste Storage Tanks - Above or below ground

- 1. Inspect all visible elements on a monthly basis. Repair defects or report to NRCS representative and/or manufacturer (if applicable).
- 2. Inspect and maintain all safety and rescue equipment (buoys, ropes, ladders, etc). Ensure that all gates, fences, and warning signs are preventing unintended access.
- 3. Inspect staff gauge or water level measurement device at each pump out event. Check that markings and delineations are visible and that ropes/pulleys/chains are free from defects. Replace when necessary (1-3 years).

5.1.2. Bio Security

How Diseases Spread



Steps to Take to Avoid Disease Spread

To reduce the risk of introducing disease into a flock, maintain a bio security barrier (physical barrier, personal hygiene, and equipment sanitation) between wildlife, swine facilities, other commercial avian facilities, and pet birds. Some examples of good bio security practices include:

- 1. Permit only essential workers and vehicles on the premises.
- 2. Provide clean clothing and a disinfection procedure for employees and visitors.
- 3. Clean and disinfect vehicles at the farm entrance.
- 4. Avoid visiting other avian facilities.
- 5. Do not keep pet birds.
- 6. Protect the flock from exposure to wild birds.
- 7. Control movement associated with the disposal of bird carcasses, manure, and manure.
- 8. Quarantine new additions to the flock. Never allow people or material to move from the quarantined birds to the flock.
- 9. Report signs of disease to your veterinarian.

5.1.3. Air Quality

Odor and Pathogen Management

It may not be practical or feasible to eliminate all odor emissions from the operation, but it is possible to manage or mitigate the odor. Some variables that effect odor are:

Type of operation	Building design
Ventilation method	Animal numbers
Animal diets	Manure treatment system
Season	Topography
Management skill or effort	

a. Animal Cleanliness

- Clean, dry, and healthy animals are less odorous. Dirty, manure-covered animals promote accelerated bacterial growth and the production of odorous gases.
- Animal stress can also be correlated to an increase in odor production. Ventilation and environmental controls for the buildings must be properly designed and maintained to keep the animals healthy.

b. Minimize Dust

- It has been established that there is a correlation between dust and odor emission. Dust particles adsorb and concentrate odorous compounds. As the dust particles are carried by the wind, so is the odor.
- Therefore, minimizing dust will reduce odor. Most farm dust comes from feed, fecal matter
 and, in the case of poultry, from feathers and manure. Dust also comes from animal skin,
 insects, and other sources.
- Buildings should be cleaned of all dust between batches of animals (including fans, shutters, and screens).
- c. **Waste Storage Facility** to reduce emissions of greenhouse gases, ammonia, volatile organic compounds, and odor:
 - Consider alternatives and additional practices including covered anaerobic digesters (365), and composting facilities (317).
 - Adjusting pH below 7 may reduce ammonia emissions from the waste storage facility but may increase odor when waste is surface applied.
 - Consideration should also be given to the separation of the solids from the waste mixture.
 This will dilute the liquid waste product being treated in the lagoon and cause less odor. The solid separated material can be composted and sold or land applied.
- d. Animal diets can also be manipulated to produce less waste and a less odorous waste.
- e. **Proper Disposal of Mortality** Normal mortality for the animal feeding operation *must* be properly handled for both odor control and biological security of the operation. Composting, incineration, and rendering are acceptable methods for mortality disposal.
- f. Good Fly and Rodent Control Programs These programs must be a continuous process on the farm. When feed and waste products are properly handled, these problems are minimized.
- g. Utilize Trees While trees should not grow directly adjacent to facilities, wind breaks of trees correctly positioned near the facility not only create a visual barrier but can also provide a large filtration surface for dust and odorous compound removal. Trees can adsorb odorous compounds and create turbulence that enhances odor dispersion and dilution. Trees also can create a cooler microclimate around the facility, which can reduce odors.

h. Land application

- Note wind direction and avoid spreading when the wind is blowing toward populated areas.
- Avoid spreading on weekend/holidays when people are likely to be engaged in nearby outdoor and recreational activities.
- Spread in the morning when air begins to warm and is rising, rather than in the afternoon.

- Use available weather information to best advantage. Turbulent breezes will dissipate and dilute odors. Hot and humid weather tends to concentrate and intensity odors, particularly in the absence of breezes. Rain will remove the odor from the atmosphere.
- Use natural vegetation barriers, such as woodlots or windbreaks, to help dissipate and filter orders
- Establish vegetated air filters in field border area by planting conifers and shrubs as windbreaks and visual screens between cropland and residential developments.

5.1.4. Pathogen Management

Many of the same conservation practices used to prevent nutrient movement from this animal feeding operation, such as runoff and erosion control are likely to minimize the movement of pathogens. Pathogenic organisms occur naturally in animal wastes. Exposure to some pathogens can cause illness to humans and animals, especially for immune-deficient populations.

6. RECORD KEEPING

It is important that records are kept to effectively document and demonstrate implementation activities associated with CNMPs. Documentation of management and implementation activities associated with a CNMP provides valuable benchmark information for the producer that can be used to adjust his/her CNMP to better meet production objectives. It is the responsibility of AFO owners/operators to maintain records that document the implementation of CNMPs.

The CNMP requires the producer to maintain these records for no less than 5 years. It is the producer's responsibility to ascertain the minimum time required for archiving the records listed below. In some cases, if certain USDA programs are in effect, the records may need to be kept as long as fifteen years.

Also, if the operation requires a permit, annual reporting may be necessary.

Records may be kept in a number of ways:

- Forms are available from the NRCS.
- Record forms may be obtained from University of Tennessee Agricultural Extension Service (Publication 1644)
- You may develop your own records system provided that all necessary information is included.

6.1. DOCUMENTATION

The Table below shows which of the CNMP reports are required by NRCS to document plan implementation. As applicable, records include:

Table 10: Records to be maintained by Producer Farms

ltem.	Report Details	Frequency	Documentation	Tennessee Records Kepti For	Required by TDEC?
Monthly Animal		Monthly	Suggested format included1		>
Calibration Record		Annually	Suggested format included1	Two Most Recent Records	>
Soil test results	Soil Tests are to be conducted once per year for any field that has manure applied to it for consecutive years. Additionally, these collective reports will give the producer the means for tracking salts and heavy metal build-ups in the application fields.	If manure is applied for two years consecutively, annual soil testing is required.	Keep Test Reports	5 Years	>
Results of Pre-Side Dress Nitrogen or Pre-Plant Soil Nitrate Testing	Any alternative sampling technique used to address specific crop requirements that lead to a change in the applied amounts should be documented on the Land Application Record Form as well as the test results maintained for five years. It is recommended that even if the additional testing yields no direct changes to the planned allocations, the test results should be maintained for the five-year period.	if analysis is used in allocation decisions these results should be maintained	Keep Test Reports		>
Plant Tissue Testing Results		If analysis is used in allocation decisions these results should be maintained	Keep Test Reports	5 Years	>
Manure Nutrient Analysis	A manure analysis must be completed annually, for each manure storage containment and prior to application. It is essential that the rate of manure allocated be revisited each year using the current analysis data to make those decisions. The manure analysis should be used to assess the content proportions of each micro and macronutrient. One example of the effective use of the analysis would be to check the level of Magnesium against the level of Potassium. Should Magnesium be higher and the manure is applied to pasture land, the result could be detrimental to foraging livestock	Annual	Keep Test Reports	5 Years	>
Events associated with manure storage and containment structures (e.g. manure transfer overflow events)	Dates of emptying, level before emptying, and level after emptying. Discharge or overflow events, level before and after event	Event Driven	Suggested format included ¹		>-
Spill Response	Activities associated with emergency spill response plan.	Event Driven	Keep Records of Actions Taken		>

liem.	Report Details	Frequency	Doğumentation	Tennessee Records Kept For:	Required by TDEC?
Containment Source or Type Form of Commercial Fertilizer	Use Events Associated w/ Storage Structures	Event Driven	Suggested format included¹		>-
Crop records	Crops planted and planting/harvesting dates, by field.	Event Driven	Suggested format included1	5 Years	>
Transfer of manure offsite to third parties	a. Manure nutrient content b. Amount of manure transferred c. Date of transfer d. Recipient of manure	Event Driven	Suggested format included ¹	5 Years	>-
Maintenance Records	Records of maintenance performed associated with operation and maintenance plans.	Scheduled Maintenance and Event Driven	Keep Records of Actions Taken		>
Changes Made In CNMP	Some changes to the CNMP will not require a new plan to be created, other decisions will. Ask your local NRCS Field Office Personnel for information regarding changes to this CNMP.	Any actual operational or management variation from the original CNMP must be documented	Suggested format included1		>
Animal Facility Management Plan		Duration of Plan Developed or When Changes are made to CNMP (See NRCS Field Office)	CNMP	As long as facility is in operation	>
Reviews by third parties	Records associated with any reviews by NRCS, third-party consultants, or representatives of regulatory agencies: a. Dates of review b. Name of reviewer and purpose of the review c. Recommendations or follow-up requirements resulting from the review d. Actions taken as a result of the review	Scheduled	Suggested format included¹	5 Years	> -
Land Application Event by Field	(Land Application Event & Nutrient Application Summary By Field) a. Application records for each application event, including (this also applies to commercial fertilizers that are applied to supplement manure or irrigation water, if applicable) b. Field(s) where manure or organic by-products are applied c. Amount applied per acre d. Time and date of application e. Weather conditions during nutrient application f. General soil moisture condition at time of application (i.e., saturated, wet, moist, dry) g. Application method and equipment used	Event Driven	Suggested format included1	5 Years	>-
Annual Report	TDEC and TDA require a report that summarizes the operational details of a permitted farm.	Annually	Suggested format included ¹	N/A	If permitted

¹ All suggested blank formats provided below.

MONTHLY ANIMAL AND MORTALITY COUNT

Year:

Production Phase:

CALIBRATION RECORD FOR SPREADING EQUIPMENT

Year:

Comments										
Method Used										
Name of Inspectoricalibrator										
Date Equipment Inspected/Calibrated										
Date '								-		

STORAGE AND CONTAINMENT STRUCTURE EVENTS

Level After Even							-	:	
Level Before Event				-					
Event									
Storage Structure									
Date									-

Event is usually routine emptying of structure (transfer), but may include abnormal events, e.g. discharge, spillage, or overflow events.

CROPS RECORD

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Comments										
Crop. Residues Removed?			i.							
Actual										
Planned Yield										
Date Härvested										
Acres Date Dianted					,					
Acres										
J. Variety										
Eleid										
Field										

TRANSFER OF MANURE OFF-SITE TO THIRD PARTIES

	 	 ,	 	 	 	
Recipient						
Recipien Name Co						
Units of Analysis						
P205** K20						
NH45N Total N		i				
NH4:N				_		
Units of Quantity						
Quantity						
Manure Source						
Date						

CHANGES TO CNMP

Description of Planned Action/Decision: Rationale for Change and Supporting Document Reference)										
N. A.										
Date Planned Action/Decision										
Date										

69

WEEKLY INSPECTIONS

Date of Repair Completion and Initials									
Repairs Needed/Comments:									
Date of inspection (Name of inspector									
Date of Inspection									

NUTRIENT APPLICATION SUMMARY BY FIELD

Rate of Amount N R205 Comments/Planned vs. Applied Annication Applied Applied Considerations								,			
K20											
P205			:								
N Applied											
Applied											
Rate of Anniication	Y										
Nutrient Source!											
Field No. Applicator Used											
Eield No.											
Date/Time Tract No.	Minor Scott Control of the Control o										

Nutrient Source could be Irrigation Water, Starter Fertilizer, Fertilizer, or manure. Weather conditions 24 hrs before, during, and 24 hours after application should be noted in comments box

ANNUAL REPORT

Operation Name:

Date Submitted:

Number and types of animals on site.	Types:	Num	per:
2. Estimated amount of litter, manure, compost and/or process wastewater generated in the previous calendar year.	Amount:		
3. Estimated amount of litter, manure, compost and/or process wastewater transferred to a 3rd party in the previous calendar year.	Amount Tra	insferred:	
4. Total number of acres for land application covered by the nutrient management plan.	Acres:		
 Total number of acres under control of the landowner that were used for land application of litter, manure, compost and/or process wastewater in the previous calendar year. 	Acres:		
6. Summary of all litter, manure and/or process wastewater discharges to waters of the state from the production area that have occurred in the previous calendar year, include date, time and approximate volume.	Date:	Time:	Volume:
7. The current version of the Comprehensive Nutrient Management Plan was developed and/or approved by a certified nutrient management planner.	Yes/No	Comment	S:

Mail a completed form to the following agencies:

Tennessee Department of Environment and Conservation
Division of Water Pollution Control
6th Floor L&C Annex, 401 Church Street
Nashville, TN 37243

And

Tennessee Department of Agriculture
Ellington Agricultural Center
P.O. Box 40627
Nashville, TN 37204

MANURE ANALYSIS AND SOIL TEST REPORTS

		Soil Test
Tract No.	Field No.	Sample No
5590	1	1
5590	2	2
5590	3	3
5590	4	4
5590	5	5
5590	6	6
5590	7	7A
5590	7	7B
5590	8	8A
5590	8	8B
5590	9	9
6895	10	10
6895	11	11
6895	12	12
	13	13
6895		
6895	14	14
6895	15	15
6895	16	16
6895	17	17
X	X	23
1910	24	24A
1910	24	24B
1910	24	24C
1913	25	25A
1913	25	25B
1913	26	26
2164	30	30A
2164	30	30B
2164	32	32
2164	33	33
2164	34	34A
2164	34	34B
2164	34	34C
2164		35
	25	
2164	36	36A
2164	36	36B
2164	36	36C
2164	37	37
2164	38	38
2157	1	MOORE
954	1	SU1A
954	1	SU1B
954	2	SU2
954	3	SU3
954	4	SU4
954	5	SU5

AGRICULTURAL DIAGNOSTIC LABORATORY UNIVERSITY OF ARKANSAS- FAYETTEVILLE

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LIQUID MANURE FOR FERTILIZER ANALYSIS (report for AGRI-429) Name: JERRY BURCHAM Received: 10/11/2007 4640 HWY 423 Address: Mailed: 10/17/2007 McKENZIE City: State Zip: TN 38201 County: CARROLL (TN) Check #: 1064 M71002 Lab. No. Sample I.D. NONE GIVEN Animal type swine -age/lbs 170 lbs Bedding type opne Manure type pit under barn Sample date 10/02/2007 Age of manure 6/07 to 10/07 pΗ 6.9 EC(umhos/cm) 21300 % Solids 1.52 mg/l on "as-is"basis Total N 2966 413 Total P 1788 Total K Total Ca 308 Ammonia-N 2778 Nitrate-N lbs/1000 gal on "as-is" basis Total N 24.7 TOTAL P AS "P205" 7.9 TOTAL KAS "K20" 17.9 2.5 Total Ca Ammonia-N 23.1

Nitrate-N

^{&#}x27;lbs/1000gal P2O5 = mg/l Total P on "as-is" basis multiplied by $2.29^{\circ}0.00833$ 'lbs/1000gal K2O = mg/l Total K on "as-is" basis multiplied by $1.2^{\circ}0.00833$

THE UNIVERSITY of TENNESSEE

SOIL TEST REPORT

JERRY BURCHAM 4640 HWY 423

MCKENZIE, TN 38201 Hamillahalaldha

Diosystems Engineering and Environmental Science 5201 Marchant Drive Nashville, TN 37211-5112 (615) 832-5850 djoines2@ulk.edu

					Date	Tested: 8/	4/2005			*		
Count	v:Can	oll			- Se					ip Mumbei		295062
			1	lehlich 1	SOILTE	STRESE	JLTS an	d RATING	35*		San	
Lucia						(Pounds F	er Acre)	4	19 5		Organie	Soluble
Sample Hombar	Waine pH	Buller Value	P Phosphorus	K Potossíum	Ca Calcium	Mg Magnesium	.Zn Zinc	Cu Copper	Fe Iron	nti Manganese	Matter %	bby 21/p
25	5.1	7.6	24 14	55 L								-
100					RECO	MMEND	ATIONS	1994 est				
Sample Number		, ,		e Fertili	zer/Cline	Applicatio	n Rate a	nd Tuming				

Corn Silage >25 T/A

NIPOSIKO

Nirogen/Phosphale/Potastr 180 / 100 / 300 pounds per acre

Limestone:

2 tons per acre

Banding a portion or all of the phosphate and potash two inches to the side and below the seed level may result in increased yields on soils testing low in either or both phosphorous and potassium. For soils testing medium or higher, either banding or broadcasting are effective methods of application. If fertilizer is placed directly with the seed, do not apply more than 30 pounds per acre of nitrogen or nitrogen plus potash to prevent seedling injury and loss of stand.

Split applications of nitrogen may be beneficial when nitrogen rates are greater than 120 pounds per acre.

If nitrogen sources containing urea are not incorporated, some loss of nitrogen may occur if applied to moist soils followed by three or more days of rapidly drying conditions without rainfall.

Reduce nitrogen rates following leguninous cover crops. A good crop of crimson clover or hairy vetch in early bloom stage will supply about 50-70 pounds per acre of nitrogen.

If zinc was tested and is below 2 pounds per acre, apply five pounds of zinc (approximately 15 pounds zinc sulfate) per acre just prior to planting.

Corn Silage 19-25 T/A

NIPOIKO

Nerggen/Phosphate/Potash 150 / 80 / 240 pounds per acre

Limestone:

2 tons per acre

Banding a portion or all of the phosphate and potash two inches to the side and below the seed level may result in increased yields on soils testing low in either or both phosphorous and potassium. For soils testing medium or higher, either banding or broadcasting are effective methods of application. If fertilizer is placed directly with the seed, do not apply more than 30 pounds per acre of nitrogen or nitrogen plus potash to prevent seedling injury and loss of stand.

Split applications of nitrogen may be beneficial when nitrogen rates are greater than 120 pounds per acre.

BURCHAM - Page 1

*Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.)

**PPR = Parts per Million
If you have questions about these recommendations, contact your County Extension office. Visit our web site at http://bioengr.ag.utk.edu/sofitestlab for additional information. If nitrogen sources containing urea are not incorporated, some loss of nitrogen may occur if applied to moist soils followed by three or more days of rapidly drying conditions without rainfall.

Reduce nitrogen rates following leguminous cover crops. A good crop of crimson clover or hairy vetch in early bloom stage will supply about 50-70 pounds per acre of nitrogen.

If zinc was tested and is below 2 pounds per acre, apply five pounds of zinc (approximately 15 pounds zinc sulfate) per acre just prior to planting.

BURCHAM - Page 2

"Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.)

"PPM * Parts per Million

If you have questions about these recommendations, contact your County Extension office.

If you have questions about these recommendations, contact your county extension once.

Visit our web site at http://bioengr.ag.utk.edu/soiltestlab for additional information.

THE UNIVERSITY of TENNESSEE

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SOIL TEST REPORT

JERRY BURCHUM 4640 HIGHWAY 423

MCKENZIE, TN 38201

Debruch K Joines
Manager
Soil, Plant and Pest Center
S201 Marchant Drive
Nashwille, TN 37211-5112
(615) 832-5550
soilclantprestcenter@utk.edu

Date Tested: 10/30/2007 County: Carroll Lab Number: 323222 Mehlich 1 SOIL TEST RESULTS and RATINGS* 🦠 - (Pounds Per Acre) - -Sample Number Magnesism Coppe iron Manganese Boron Sosium SUIA 5.0 7.6 28 M 249 H 1280 + S 64 + S Organic Matter % Spinish Selta PPM** RECOMMENDATIONS

RECOMMENDATIONS
Sample | Fertilizer/Lime Application Rate and Timing |

SU1A Hybrid Bermudagrass Hay - Maintenance

N / P2O3 / K2O

Narogen/Phosphate/Potash: 120-400 / 40-80 / 40-80 pounds per acre

imestone: 2 tons per acre

The rate of nitrogen topdressing depends on the need for forage. Apply 60 to 100 pounds of the nitrogen May 1 and again after each cutting when conditions favor regrowth. Four cuttings are often possible. If the higher rates of nitrogen are used, use the higher rates of phosphate and potash. Broadcast all lime and fertilizer on the soil surface. If more than 4 tons of time per acre are required, apply only 4 tons of time per acre and re-test after one year.

When nitragen sources containing area are not incorporated, some loss of nitrogen may occur if applied to moist soils followed by three or more days of rapidly drying conditions without rainfall. If area is the nitrogen source, some loss of nitrogen may occur if applied to moist soils followed by three or more days of rapidly drying conditions without rainfall.

Apply recommended amounts of phosphate and potash in one application any lime during the year.

County: Carroll

Mehlich 1: SOIL TEST RESULTS and RATINGS*

(Pounds Per Acre)

Sample Viater PM Value Phosphorus Potassium Calcium Magnesium 2inc Copper Iron Manganese Boron Sodium

SUIB 5.8 7.6 18 L 111 M 1280 + S 64 + S

Organic Solubii Matter Saits % PPM

BURCHUM - Page 1

*Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.)

"PPM = Parts per Million
If you have questions about these recommendations, contact your County Extension office.
Visit our web site at http://soilplantandpest.utk.edu for additional information.

RECOMMENDATIONS Fortilizer/Lime Application Rate and Timing Number SUIB Hybrid Bermudagrass Hay - Maintenance N/P2O1K20 Nitrogen/Phosphale/Polash: 120-400 / 60-120 / 80-160 pounds per acre 2 tons per acre

The rate of nitrogen topdressing depends on the need for forage. Apply 60 to 100 pounds of the nitrogen May 1 and again after each culting when conditions favor regrowth. Four cuttings are often possible. If the higher rates of nitrogen are used, use the higher rates of phosphate and potash. Broadcast all lime and fertilizer on the soil surface. If more than 4 tons of lime per acre are required, apply only 4 tons of lime per acre and re-test after one

When nitrogen sources containing urea are not incorporated, some loss of nitrogen may occur if applied to moist soils followed by three or more days of rapidly drying conditions without rainfall. If urea is the nitrogen source, some toss of nilrogen may occur if applied to moist soils followed by three or more days of rapidly drying conditions without

Apply recommended amounts of phosphate and potash in one application any time during the year.

County: Carroll Lab Number: 323224 Mehlich 1 SOIL TEST RESULTS and RATINGS* (Pounds Per Acre) SU2 5.8 40 H 176 H 1280 + S 64 + S Organic Ratter % Salts PPM*** RECOMMENDATIONS Sample Fertilizer/Lime Application Rate and Timing Number

Hybrid Bermudagrass Hay - Maintenance SUZ NIFOIKO

Nitrogen/Phosphale/Potash: 120-400 / 20-40 / 40-80 pounds per acre

2 lons per acre

The rate of nitrogen topdressing depends on the need for forage. Apply 60 to 100 pounds of the nitrogen May 1 and again after each cutting when conditions favor regrowth. Four cuttings are often possible. If the higher rates of nitrogen are used, use the higher rates of phosphate and potash. Broadcast all lime and fertilizer on the soil surface. If more than 4 tons of time per acre are required, apply only 4 tons of time per acre and re-test after one

When nitrogen sources containing urea are not incorporated, some loss of nitrogen may occur if applied to moist soils followed by three or more days of rapidly drying conditions without rainfall. If urea is the nitrogen source, some loss of nitrogen may occur if applied to moist soils followed by three or more days of rapidly drying conditions without

Apply recommended amounts of phosphate and potash in one application any time during the year.

County: Carroll

Lab Number.

323225

BURCHUM - Page 2

"Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.) **PPM > Parts per Million
If you have questions about these recommendations, contact your County Extension office.

Visit our web site at http://soilplantandpest.utk.edu for additional information.

			72	Ylehlich 1	and in				5 3			
					7.00	(Pounds P						
Sample Number	Water pH		Phosphorus	K Potussium	Cz Culcium	Mg Magneslum	Zn Zina	Cu Coppyr	Fe Iron	Mn Manganese	B Boron	Na Sodie
3:13	5.5	<u> 7.6</u>	18 L	320 + V	1280 + S	64 + S	· ***		[1		<u> </u>
	Organic (Antter	Satts										
	*	PPM•	- 									
							-	/	·			
ample					The state of the s	OMMENDA						
lumber	3	4.	L L			Application	Rate a	nd Timing	*			
SU3	Cool	Seaso	n Grass P	ARREST CONTRACTOR		ince						
	X 4m			N/P2O2	K20					100		
	អេយេជិនា	vr-nosp	nate/Polash:	60-120 / 6	0 / 0 pour	nds per acre						
	Limes	tone:		2 tons per	acre							
niv re						tash in one a	enediantie	an nevéiese	American 44		wii. 60	
nitiae	PR DAL	acre A	nauet 15 h	r Priuspiidi r Sanlanih	ar 15 ann	I from Marci	things in	ni anymme	curing t	ie year. Ap	DIA PO	pour
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und 5				an lar bame		ratus 18 Karatania	_ :1	ما المد المسائمية	- 4-16			
ta fit	numb 15	son, ap	oply nitroge	en for that :	season o	nly. If fescu	e is stoc	kpiled in th	e fall, ap	ply 60 pour	ids of t	l per
	gust 15	to Sep	oply nitroge otember 15	en for that :	season o	nly. Il lescu	e is sloc	kpiled in th				√ per
	gust 15 ty:Carr	to Sep	olember 15	,				kpiled in th	<u>L</u>	ply 60 pour ib Number		√ per
	gust 15	to Sep	olember 15	lehlich 1	SOLETI	EST RESU	LTS an	kpiled in th d:RATING	<u>L</u>			√ per
	gust 15	to Sep	olember 15	lehlich 1	SOLETI		LTS an	kpiled in th d:RATING	<u>L</u>			√ per
Count	gust 15 ty: Carr	IO Sep oil	olember 15	lehlich 1	SOLETI	EST RESU	LTS an	kpiled in th d:RATING	<u>L</u>			√ per
Count Sample Sumber	gust 15 ty: Carr Valor pH	IO Sep Oil Botter Value	olember 15	Palassiuni	SOLUTI Ca Calcium	EST RESU (Pounds Pa Mg Magnesium	LTS an	kpiled in th d:RATING	La S *	nb Number	¥	3232
Count	gust 15 ty: Carr	IO Sep oil	olember 15	Palassiuni	SOIE TE	EST RESU (Pounds Pi	LTS an r Acre) zn	kpiled in th d:RATING 	La 3 5 *,	ab Number	8	3232 8
Count sample jumber	water pH	IO Sep cell Better Value 7.7	Phasphorus 20 M	Palassiuni	SOLUTI Ca Calcium	EST RESU (Pounds Pa Mg Magnesium	LTS an r Acre) zn	kpiled in th d:RATING 	La 3 5 *,	ab Number	8	3232 8
Count sensie lumber	gust 15 ty: Carr Waler gH	Better Value	P Phasphorus	Palassiuni	SOLUTI Ca Calcium	EST RESU (Pounds Pa Mg Magnesium	LTS an r Acre) zn	kpiled in th d:RATING 	La 3 5 *,	ab Number	8	3232 8
Count sensie lumber	water S.7 Organic Water	IO Sep Oil Better Yalus 7.7 Solubi Salts	P Phasphorus	Palassiuni	SOLUTI Ca Calcium	EST RESU (Pounds Pa Mg Magnesium	LTS an r Acre) zn	kpiled in th d:RATING 	La 3 5 *,	ab Number	8	323:
Count sample jumber	water S.7 Organic Water	IO Sep Oil Better Yalus 7.7 Solubi Salts	P Phasphorus	Palassiuni	SOLUTI Ca Calcium	EST RESU (Pounds Pa Mg Magnesium	LTS an r Acre) zn	kpiled in th d:RATING 	La 3 5 *,	ab Number	8	3232 8
Count sample jumber	water S.7 Organic Water	IO Sep Oil Better Yalus 7.7 Solubi Salts	P Phasphorus	REFITCH 1	SOLL TE Ca Calcium 1280 + S	EST RESU (Pounds Pa Mg Magnesium	LTS an er Acre) zn znc	kpiled in the	La 3 5 *,	ab Number	8	323:
Count sample sumber SU4	Water pH S.7 Organic Master %	IO Sep Oil Better Yalus 7.7 Solubi Salts	P Phasphorus	Rehiich 3.	SOIL TE	ESTRESU (Pounds Pri Mg Magnesium 64+ 5	LTS an er Acre) Zn Zinc	kpiled in th	Lc3S**	ab Number	8	323:
Count Sample SU4	Water pH S.7 Organic Master %	IO Sep Oil Better Yalus 7.7 Solubi Salts	P Phasphorus	Rehiich 3.	SOIL TE	ESTRESU (Pounds Pi Mg Mg Magnesium	LTS an er Acre) Zn Zinc	kpiled in th	Lc3S**	ab Number	8	3232 8
Sampia Sumber SU4	Water pH 5.7 Organic Matter	Better Value 7.7 Soluble Salts	P Phasphorus	Patassium 67 L	Ca Calcium 1280 + S	EST RESU (Pounds Pa Magnesium 6a + S DMMENDA Application	LTS an er Acre) Zn Zinc	kpiled in th	Lc3S**	ab Number	8	3232 Na
Sample Sumber SU4	Water BH S.7 Organic Master % Hybri	Better Value 7.7 Solubit Salts PPM*	Phenphorus 20 M	Petalich 3 Petassium 57 L Feetiliz Hay - Ma	Ca Calcium 1280 + S REGG A//Lime	EST RESU (Pounds Pa Magnesium 64 + 5 5	LTS an er Acre) Zn Zinc	kpiled in the	Lc3S**	ab Number	8	3232 Na
Sample Sumber SU4	Water BH S.7 Organic Master % Hybri	Better Value 7.7 Solubit Salts PPM*	Phenphorus 20 M	Petalich 3 Petassium 57 L Feetiliz Hay - Ma	Ca Calcium 1280 + S REGG A//Lime	EST RESU (Pounds Pa Magnesium 64 + 5 5	LTS an er Acre) Zn Zinc	kpiled in the	Lc3S**	ab Number	8	3232 Na
Sample Number SU4	Water pH 5.7 Organic Marier % Hybri	Butter value 7.7 Solubly Salts PPIN*	Phenphorus 20 M	Parassium 57 L Fertiliz Hay - Ma N/P,0,1	Ca Calcium 1280 + S • REGG AVUMe: intenancy (KyO 40-80 / 1	EST RESU (Pounds Pa Magnesium 6a + S DMMENDA Application	LTS an er Acre) Zn Zinc	kpiled in the	Lc3S**	ab Number	8	3232
Count Sample Sud Sud Sample Sample Number	Water pH 5.7 Organic Marter % Hybri Ntrope	Better Value 7.7 Soluble Salts Prist* d Berri	Phospherus 20 M mudagrass	Fertilizes Hay - Ma N/P ₂ O ₃ /120-000 pt	Cactorn 1288 + S REGG ENUME intenant / Kyo 40-80 / 1	ESTRESU (Pounds Pi Magnesium 64+ 5 DMMENDA Application 20-240 pour	LTS an er Agre) Zn Zinc TIONS Raterar	cu Copper	Fe tran	Mn Manganes	B Boron	Na Sodiu
Count Sample Sud Sample Number Sud	Water pH 5.7 Organic Matter % Hybri	Botter Value 7.7 Solublish Salish PPM d Bernari Phosp Stone: ogen t	Phasphorus 20 M mudagrass shote/Polash;	Rectilize Feechlize Feechlize	Calcium 1280 + S REGG EVILIME Intenancy (KyO 40-80 / 1) 7 acre on the ne	ESTRESU (Pounds Pi Magnestum 64 + 5 DMMENDA Application 20-240 pout	LTS and a Zinc Zinc Zinc TIONS Rateral ands per a	diRATING Cu Copper id-Timling acre / 80 to 100 are often p	Fe Iron	Mn Manganess	B Boros	Na Sodium
Counting Sample Submoor Sud	Water pH 5.7 Organic Marter % Hybrid Nitroge Limes e of ruit fier east	Butter Value 7.7 Solubt Salts PPM** d Bern en/Phosp stone: oogen t	Pheaphorus 20 M nudagrass phate/Potashing when c	Petalich 3 Petassium S7 L Enerthliz Hay - Ma N/P,0,1 2 tons per a depends preditions for	Ca Calcium 1280 + S REGG EVENTE Intenanc 1 K ₂ O 40-80 / 1 r acre on the ne avor repri	ESTRESU (Pounds Pi Magnesium 64+ S DMMENDA Application :e	LTS and pr Acre) Zn Zinc TIONS Rateral	Ce Copper I I I I I I I I I I I I I I I I I I I	Fe tren	of the nitrog	B Boron Mz	Na Sodium

When nitrogen sources containing urea are not incorporated, some loss of nitrogen may occur if applied to moist soits followed by three or more days of rapidly drying conditions without rainfall. If urea is the nitrogen source, some loss of nitrogen may occur if applied to moist soits followed by three or more days of rapidly drying conditions without

Apply recommended amounts of phosphate and potash in one application any time during the year.

County: Carroll

Lab Number:

323227

BURCHUM - Page 3

*Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.)

**PPM = Parts par Million
If you have questions about these recommendations, contact your County Extension office. Visit our web site at http://soilplantandpest.utk.edu for additional information.

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Sample Tumber	Water pei		P Phosphorus	K Potassium	Ca Calcium	Magnesium	Zn Zioc	Cia Copper	Fe iron	ion Manganesa	n Boron	Na Bodium
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N / P2O8 / K10 Nitrogen/Phosphate/Potash: 210 / 160 / 80 pounds per acre

FRITZERRINGERMENTALISM CARROL

Lime is not recommended at this time

Banding a portion or all of the phosphate and potash two inches to the side and below the seed level may result in increased yields on soils testing low in either or both phosphorous and potassium. For soils testing medium or higher, either banding or broadcasting are effective methods of application. If fertilizer is placed directly with the seed, do not apply more than 30 pounds per acre of nitrogen or nitrogen plus potash to prevent seedling injury and loss of stand.

Split applications of nitrogen may be beneficial when nitrogen rates are greater than 120 pounds per acre.

If nitrogen sources containing urea are not incorporated, some loss of nitrogen may occur if applied to moist soits followed by three or more days of rapidly drying conditions without rainfall.

Reduce nitrogen rates following leguminous cover crops. A good crop of crimson clover or hairy vetch in early bloom stage will supply about 50-70 pounds per acre of nitrogen

BURCHAM - Page 4

"Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.) "PPM = Parts per Million
If you have questions about these recommandations, contact your County Extension office,

Visit our web site at http://soilplantandpest.utk.edu for additional information.

If zinc was lested and is below 2 pounds per acre, apply five pounds of zinc (approximately 15 pounds zinc sulfate) per acre just prior to planting.

MGORE Small Grain/Soybean Rotation

N/P204/K,O

Nmogén/Phosphale/Potash: 45-90 / 90 / 50 pounds per acre

Limestone:

Lime is not recommended at this time

The above recommendation will supply the phosphate and polash of both small grain and scybeans.

For small grain establishment apply 15 pounds of nitrogen per acre when following soybeans and 30 pounds per acre when following corn, grain sorghum or grasses. Nitrogen is not recommended for soybean establishment since it is a legume and when properly inoculated will supply its own nitrogen.

Treat soybean seed with two-tenths (0.2) ounce molybdenum per bushel when soil pH is 6.5 or below. Apply either one-half (0.5) ounce of sodium molybdate per bushel or for liquid hopper-box applied sources containing fungicides follow the product label.

Topdress small grain February 15 to March 15 with 50 to 90 pounds per acre of nitrogen. Use lower rates of nitrogen where lodging has been a problem.

BURCHUM - Page 5

*Ratings: Indicates relative availability of nutrions to plants. (See back of this form for detailed explanation.) "PPM = Parts per Million
If you have questions about these recommendations, contact your County Extension office.

Visit our web site at http://soliplantandpest.utk.edu for additional information.

THE UNIVERSITY of TENNESSEE Extension

SOIL TEST REPORT

JERRY BURCHAM 4640 HWY 423

MCKENZIE, TN 38201

Margallher lable

loss of stand.

Debotah K. Joines Extension Assistant Biosystems Engineering and Environmental Science 5201 Marchant Drive Nashville, TN 37211-5112 (615) 832-5850 dioines2@ulk.edu

Date Tested: 7/10/2006 294401 Lab Number: County: Carroll Mehlich A SOIL TEST RESULTS and RATINGS* Organic Soluble ĸ Ma Zn Cu Min Sales Matter Sample Huffer Water 1/4 PPM" Number Value Phosphorus Potassium Magnesium 7.8 1 12 L 30A RECOMMENDATIONS Fertilizer/Eme/Application Rate and Triming Sample Number ¿Com Silage >25 T/A N/P,O,/K,O Nitrogen/Phosphate/Potash: 180 / 200 / 300 pounds per acre Eanding a portion or all of the phosphate and potash two inches to the side and below the seed level may result in increased yields on soils testing low in either or both phosphorous and potassium. For soils testing medium or higher, either banding or broadcasting are effective methods of application. If fertilizer is placed directly with the seed, do not apply more than 30 pounds per acre of nitrogen or nitrogen plus potash to prevent seedling injury and loss of stand. Split applications of nitrogen may be beneficial when nitrogen rates are greater than 120 pounds per acre. If nitrogen sources containing urea are not incorporated, some loss of nitrogen may occur if applied to moist soils followed by three or more days of rapidly drying conditions without rainfall. Reduce nitrogen rates following leguminous cover crops. A good crop of crimson clover or halry vetch in early bloom stage will supply about 50-70 pounds per acre of nitrogen. if zinc was tested and is below 2 pounds per acre, apply five pounds of zinc (approximately 15 pounds zinc sulfate) per acre just prior to planting. 30A Com Silage 19-25 T/A Nitrogen/Phosphate/Potash: 150 / 160 / 240 pounds per acre Limestone: :1.5 tons per acre Banding a portion or all of the phosphate and potash two inches to the side and below the seed level may result in increased yields on solls testing low in either or both phosphorous and potassium. For soils testing medium or higher, either banding or broadcasting are effective methods of application. If fertilizer is preced directly with the iseed, do not apply more than 30 pounds per acre of nitrogen or nitrogen plus potash to prevent seedling injury and

BURCHAM - Page 1

*Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.)

Split applications of nitrogen may be beneficial when nitrogen rates are greater than 120 pounds per acre.

If nitrogen sources containing urea are not incorporated, some loss of nitrogen may occur if applied to moist soils

followed by three or more days of rapidly drying conditions without rainfall.

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Coun	ty: Car	roll	,,,,,,,,,	11							Lab	Number	ri .	294405
1445.25				T.O.N	nonlich 1	SOIL	ESTRES	JI TS a	nd RAT	NGS*				
			150			7 J. F.	Pounds						Organic	Salubia
Sample	Water	Buffer		P	К	C#	Mg	Zn	Cvs	Fe		ស្តីព	Matter	Salts
Humber	pri	Value		sunorus	Porassium	Calclum	Magnesium	Zinc	Coppe	r Iran		asonapanse	*	PPM"
240	5.7	7,6	24	M	49 L	il and the second		a principle	S		25 3			
Sample	Contract of						DMMEND Applicatio							
Number	]		Cro		e enm	CENTUMES	<u>erkimneend</u>	Ni Carele	meann	/\B(C****				
24C	Com	Silage				······································			······································		***************************************			
	5.~ <u>.</u> ~	501120262	PLUE POR		N/P,O.	/K,0		**********				******		, x.m. + x. + x. + y. + m. 4
	Nitroge	√Phos¢	ahate/F	otash:			nds per ac	re	*********		** - < > **	*****	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
و د مطالب مولو این به باده ما در با رو	Limes	lone:			2 tons per	r acre		*******	*********					
Banding	a porti	on or a	all of t	he phi	osphate a	nd potash	two inche	s to the s	side and	below thi	e see	d level n	nay resu	Jit in
increase	d yield:	s on si	oils le	sting l	low in eith	er or both	phosphore	ous and	potassiul	n, For so	iis le	sting med	מוחנט סנ	
higher, e	ither ba	anding	i or pr	oadca	isting are	effective f	nethods of	applicat	ion. If ie	milizer is	bisce	o directi	y wua c	ne i
		bià usc	ne m	an Bu	pounos p	er acre or	nitrogen o	. uittoāei	i bina bo	ilasii tn h		II 2660MI	ig injury	anu ;
loss of st		,	x +~		************							de mor ne	, , ,	
Sput appi	cation	s of m	roge	n may	na penen	iciai wnen	nitrogen ra	nes are	greater i	11011 (20)	)OUT	us per ac	11 55. ***********************************	
if nitroger	า รอมเด	es co	ntaini	ng ure	a are not	incorpora	ted, some	ioss or n	ikogen n	asy occur	11.94	ibileo (o i	DOISE SU	HI25
lollowed (	by thre	e or m	lore c	ays or	Labidiy di	rying come	litions with	on tauc	All,					
Reducer	litroger	rates	s follo	wing le	eguninou:	s cover cr	ops. A god	og crop c	or Griinso	LI CIOVEL C	n us	ny vercai	#1 Early	1
bloom sta	ige will	suppl	y abo	ur nu-	70 pouno	s per acre	of nitroger				5. 4 C			exial
If zinc wa	s lesle	o and	is be	ow 3 1	pounas pe	er acre, ar	ibià iine bo	unas oi .	siuc (abb	DOXILISES	i <b>y</b> (o	pourius.	ziijo sur	late)
per acre j								*****	*****	, ) was a work a /** x x w	*****			
24C	Corn S	ilage	19-2:	i.I.A	**********		is per acre		*****	.,, .,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		*********		* *************************************
C	1		ه د د و د د همه ما د همه ما		N/P ₂ O ₂ /	K,0		*****	************		******			1
*** {{	virrogen!	rnospi	rate/-C	rssu::]	50 \ QV \ 7	SAN BORLIO	P Der BCLE			; /***** <b>******</b> ***		**********	******	***********
41	-iTTG2!	₩ <b>.</b>	********		tolls hel	eme			* ( * * * * * * * * * * * * * * * * * *		<b>~~~</b> ~~*	********		

BURCHAM - Page 4

*Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.)

"PPM = Parts per Million
If you have questions about these recommendations, contact your County Extension office.

Visit our web site at http://bioengr.ag.ulk.edu/soiltestlab for additional information.

Bandir	ng a por	tion or	all of th	e pho	sphale	and pota	sh lwo incl	ies to the	side and b	elow the s	seed level	may re	sult in
increa:	sed yiel	ds on s	soils tes	ting lo	w in elti	her or bo	illi phaspha	pue snor	polassium	. For soils	testing m	edium (	or
• higher	, either	bandin	g or bro	adcas	iting are	effective	e methods	of applica	tion. If fert	ilizer is pl	aced direc	lly with	the
seed, of		ipply o	ore that	n 30 p	oriuge !	oer acre	of nitrogen	or nitroge	n plus pola	ish to pre	vent seed	iud iuin	ry and
L		ده و پستونه د د						سمه فروز و سرسمه هر مرموع الشارع الإسعاد	در نے سامت دی۔ وجہ			*****	* ,
							en nitrogen						
it unto	ien sou	rces c	กเลเกเก	g urea	are no	t iucorbo	rated, som	e ioss of i	ntrogen ma	ay occur ii	applied to	moist	50112
							nditions wi				hains cuta		
Reduce	a nitrog	en rate	S tollow	ing leg	กลายการ เอดเททย์	ds cover	crops. A g ire of nitrog	ood crob	of Cimison	CIDARI OL	nady velo	ii iii cai	ıy
											12 manual		· iFelm)
per acr					ounas ¢	er acre,	apply five I	וט פטווטפע	zinc (appi	JXIIII BICEIY	to bonno	5 ZIIIL 3	unate
********		********	าสมเทศ		* *********	************	****************	**********			b Numbe		294408
COU	ity: Car	TON		The state of		oou e		uudo.	SE HATIN	2 m	D NOTIFIE		
		****		aylei	IIICII I		ESTARES (Pounds			<b>3</b> 2			<u> </u>
Commin	Water	Buffer	# # # # # # # # # # # # # # # # # # #		К	Ca	Mg	<u> Zu</u> Zu	Cri	Fe	tên	Organic Matter	Soluble Solts
Sample Number	pH	Value	Phosphot	rus Po	tassium	Calcium	Magnesium	Zinc	Copper	Itori	Manganest	7/5	PPM-
26	5,4	<b>_7.5</b>	16]	L   5	77 [		1						Ī
		E <b>1</b> (1)		1.5		REC	OMMEND	ATIONS			<u> </u>	1	
Sample					Fertiliz	er/Ume	Application	in Rate a	nd Timing				
Number			Crop			olik i ja elektrika.						~~~	Marine 1970
26	. Com	Silage	.≥25.T//	A	N / P,O.	**************************************							
	Milma	a/Phore	hala/Pala				unds per ac		******	*********			
a ⁿ	Limes		ANDREAD IN CO.		ons per		hins har a	41.0	*************		******************	*****	
Randing	a codi	an or a	ill of the	nhast	ohate a	nd potas	h two inche	es to the s	ide and be	low the se	ed level n	nay resi	utt in
increase	d vield	s on so	ils testi	na low	in eith	er or bott	n phosphor	ous and p	otassium.	For soils	testing me	dium or	•
higher, e	either b	anding	or broad	deasti	nd are	effective	methods o	f applicati	on. If fertili	zer is pla	ced direct	y with li	ne :
seed, do	not ap	iply mo	re than	30 po	unds pe	er acre o	f nitrogen c	r nitrogen	plus polas	ih to prev	ent seedlir	ig injun	/ and
loss of s		*	,						**	***		*********	******
Split app	lication	is of ni	rogen n	nay be	benefi	cial wher	n nitrogen i	ales are g	greater than	120 pou	inds per ad	re.	
ilf nitroge	n sour	ces cor	rtaining	urea :	are not	incorpora	ated, some	loss of ni	trogen may	occurif	applied to	moist so	olis :
followed	by thre	e or m	ore day	s of ra	bidly di	ying con	ditions with	out raints	<u> </u>			******	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Reduce	nitroge	n rates	followin	ig legu	ıminou	cover c	rops. A go	og ctob o	f crimson c	lover or i	airy vetch	in early	' ţ
bloom st	age wil	suppl	about	50-70	pound	s per acn	e of nitroge	iu.		وه میلیدو و باشد میلید از در از در از در استان	*************		
If zinc wa	as teste	ed and	is below	/ 2 pa	unds pe	r acre, a	pply five po	ounds of 2	inc (appro	kimately 1	o pounas	zine su	nate) ;
per acre	****		******		*****		************				*****	*****	*******
26	Corn	siiade,	19-25,I	(A	/ P,O,/		*****		wyaeee******		v karşıyının filmini inderes	* *********	***********
;	Nitrosen	/Phoseh	ate/Poies				nds per ac	··· ,• · · · · · · · · · · · · · · · · · ·	. • • • • • • • • A R h • •		******		
	limest	one:	************	2 to	ns per	ecte Scre	migarienski biox		**. **, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			******************	
Banding	a portio	n or al	of the	phospi	hate an	d potash	two inches	s to the sk	de and belo	w the se	ed level m	ay resu	lt in 📑
Vincreased	i vields	on sol	ls testin	a low	in eithe	r or both	phosphoro	ous and po	otassium. F	or soils L	esting med	num or	į.
ihigher, ei	ther ba	ndina r	or broad	castin	o are e	ffective r	nethods of	application	n. If fertiliz	er is plac	ed directly	with in	e
seed, do	not app	oly than	e than 3	yoq Qi	inds pe	r acre of	mirogen o	nitrogen	plus potes	h to preve	ini seediin	a winth	and
loss of sta		********			******					#1.514mmmpggg		, , , , , , , , , , , , , , , , , , ,	,,
Split appl	ications	of nitr	ogen m	ay be	benefic	ial when	nivogen r	sies are g	reater than	יוצע סטע	nas per ac	re.	
If nitroger	sourc	es con	taining t	ırea a	re not #	ncorpora	ted, som≘	loss of nit	rogen may	occur it a	pplied to n	noist so	als :
followed t	y three	or mo	re days	of rap	idly dry	ing cond	litions with	out raintal			**********		
Reduce n	itrogen	rates	following	g legu	minous	cover cr	ops. A god	od crop of	crimson cl	over or hi	ary vetch	n early	•
:bloom sta	ne will	SHOOLV	about 5	i0-70 i	nounds	per acre	of nitroce	٦.					
If zinc wa	s tester	d and is	s below	2 pou	nds pei	racre, ap	oply five po	unds of zi	inc (approx	imately 1	o pounas z	inc sul	rate)
iper acre ji	ust prio	r to pla	inting.				****						
County	: Carrol	lt.								Lab	Number:	2	94407
											<b>(**</b> . ) (***	MUNE.	Man E

*Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.) -- PPM = Parts per Million

				Mehlich	1-801L	TEST RE	SULTS	nd RATIN	G\$*			
			<u> </u>	K	C &	NPounds	S <u>Per Acr</u> Zn	Cu	Fe	Mn	Organic Matter	Soluble Salte
Sample Numbe			r		*	_	•	Copper	tron	Manganese	Masker ≤	6bW-
25A	5.6				1	7		7	T			T
		To Face			REC	OMMEN	DATION.					
Sample				e Perti				and Timing				
Numbe	2 <b>r</b> [		Cron							· · · · · · · · · · · · · · · · · · ·	***************************************	
25A	Con	ı Silan	e >25 T/A	************				-		************		
	677. See.	<u></u>	***********	N/P2C			-4.3		,		*********	
				180/20		ounds per a	acre	****			***********	
**************************************	Lime	sione:	. 76 w E th	2 tons pe	et acte	mangamungamin mla digan Turuk	······································	mids and ha	low tha	ened lavel r	nav rae	alt in
Danoin	d a box	non or	q sou to lis	nosphale	anu pola:	sn iwo inci. In abacaba	valie and	side and be potassium.	For soils	s iestina me	dium oi	
higher	eu ye:	handin	u vi picay Minsan suns	caetina ara	affective	methods	of applica	tion, If fertil	izer is D	laced direct	ly with t	he
seed d	lo noi =	only m	ore than 3	io nounds	oer acre c	of nitrogen	or nitroge	n plus pota	sh to pre	event seedli	ng injun	/ and
loss of	stand.	. C. L. A.	INDER CONTRACTOR OF	V J							· · · · ·	
		ns of r	nitroden ma	av be bene	ficial whe	n sportin n	rales are	greater tha	n 120 p	ounds per a	cre.	
If nitroc	en sou	rces r	nninietno	rea are no	t incorpor	rated som	e loss of	iltrogen maj	y occur	f applied to	moist s	oils
follower	d by the	ee or i	nore days	of rapidly	drvina co	nditions wi	thout rain	fall,				
Reduce	nitron	en rate	s following	i legumino	us cover	crops. A g	lood crop	of crimson (	clover or	hairy vetch	in early	}
bloom s	stace w	ill supi	ally about 5	0-70 poun	ds per ac	re of nitrog	jen.		4.21		******	
ilf zine v	vas tes	ted and	d is below.	2 pounds	ber acre,	apply five I	oounds of	zinc (appro	yle)smix	15 pounds	zinc su	liate)
per acre	a just p	rior to	planting.									
25A	*****	~ + ; * + <del> +</del> + ;	2.19 <b>-2</b> 5 Tu	4	********			*********			******	
				N/P ₂ O ₄		. <del>.</del>				*****	a pumaand usp in	
						ruda bet a	ste	************		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Lime	sione:		2 tons pe	r.acre	h ina inahi	an in the i	side and bel	out the s	eed level n	INV THE	ill in
Banding	) a pon	ION OF	an or tue b	nospnate a	ana potas	n nhasahai Hiyo mone	rous and i	potassium. I	For soils	testino me	dium or	.,
inioher A	su yiek eithar h	is un si isadina	nns teathig	raeting are	effective	methods o	of anolicat	ion. If fertili	zer is pl	aced directly	y with th	18
seed do	onntar Onntar	אווים עלמני	ore than 30	) pounds d	er acte o	f nitrogen (	or nitroge	n plus potas	h to pre	vent seedlir	ig injury	and
lioss of s	tand.									4		*******
Solit and	olication	ns of n	itrogen ma	y be bene	ficial whe	n nitrogen	rates are	greater than	120 po	unds per ac	re.	
If nitroge	n sour	ces co	ntaining u	rea are not	incorpor	ated, some	loss of n	brogen may	occur i	applied to	moist sc	oils
<b>Hollowed</b>	hu thre	PA OF M	nom davs i	of capidly d	irvind con	iditions will	nout rainf	en.				
Reduce	nitroge	n rates	chiwollal a	leguminou	is cover o	rops. Ago	ood crop (	of crimson C	lover or	hairy vetch	in early	
bloom si	tsoe wi	ll subb	lv about 50	2-70 pound	is der acr	e of nitroge	en.			*********		
If zinc w	as test	ed and	is below 2	pounds p	er acre, e	pply five p	ounds of	zinc (appro)	kimately	15 pounds	zinc sul	fate)
per acre	just pr	ior to p	lanting.	**********			,## C 5 & & T ** ** ** ** . C .	, ~~ ~~ % _{4y} , » <del>*</del> ~~ ~ 3 300° × ~ 4		***********		
Count	y: Carr	oli								b Number:		94408
12 P. 12			e Lan	lehlich 4	SOILETE	STIRES	JLTS an	d RATING	S <u>.                                    </u>			الشدية
		Į.				(Rounds )	Zetzacre) Zn	Cu	FR	λη ( <b>κ</b>	Organis 3 Matter	Solubla Salts
Sample		Buffer	р	Potassium .	Calcium	Magne≯ium	Zinc	Copper	Iron	Manganese	X.	PPM
Number 25B	5,6 ]	7.7	12 L	41 L	An. 7   Att.	1	1					
	_ J.O J	1 1 1 1 1 1 1	16   5	711-1	REGE	MMEND	ATIONS				3 S.	Sian.
Sample				- Eediliz	er/Limes/	Voolestie	n Rale a	d trinings				
Number			Crop									
258	Corn :	Silage	>25 J/A	. x 4 / 7 44 4 / 2 4 / 2 4 / 2				*******				
		.,.		N/P,Os/	K-0	,			****	وراوية ووريور والمحرور	*****	energy of
				180/200		nds per ac	ī£			and was a gradient market has		
	Limes	oue;		2 tons per	acie	*****	******	***	*****	. ^{W.} -4 mmwide y nameme	******	

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"Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.)

Banding a portion or all of the phosphate and potash two inches to the side and below the seed level may result in increased yields on soils testing low in either or both phosphorous and potassium. For soils testing medium or higher, either banding or broadcasting are affective methods of application. If fertilizer is placed directly with the seed, do not apply more than 30 pounds per acre of nitrogen or nitrogen plus potash to prevent seedling injury and loss of stand. Split applications of nitrogen may be beneficial when nitrogen rates are greater than 120 pounds per acre. If nitrogen sources containing area are not incorporated, some loss of nitrogen may occur if applied to moist soils followed by three or more days of rapidly drying conditions without rainfall. Reduce nitrogen rates following leguminous cover crops. A good crop of crimson clover or hairy vetch in early bloom stage will supply about 50-70 pounds per acre of nitrogen. if zinc was tested and is below 2 pounds per acre, apply five pounds of zinc (approximately 15 pounds zinc sulfate) per acre just prior to planting. 25B Com Silage 19-25 T/A Nitrogen/Phosphate/Potash: 150 / 160 / 240 pounds per a :Limestone: 2 tons per acre Banding a portion or all of the phosphate and potash two inches to the side and below the seed level may result in increased yields on soils testing low in either or both phosphorous and potassium. For soils testing medium or higher, either banding or broadcasting are effective methods of application. If fertilizer is placed directly with the seed, do not apply more than 30 pounds per acre of nitrogen or nitrogen plus potash to prevent seedling injury and loss of stand. Split applications of nitrogen may be beneficial when nitrogen rates are greater than 120 pounds per acre. If nitrogen sources containing urea are not incorporated, some loss of nitrogen may occur if applied to moist soils followed by three or more days of rapidly drying conditions without rainfall. Reduce nitrogen rates following leguminous cover crops. A good crop of crimson clover or hairy vetch in early bloom stage will supply about 60-70 pounds per acre of nitrogen. If zinc was tested and is below 2 pounds per acre, apply five pounds of zinc (approximately 15 pounds zinc sulfate) per acre just prior to planting. 294409 County: Carroll Lab Number: Mehlich I SOIL TE Solubia Wa Cu Matter Salta PPM** Sample Number Value Phosphorus Potassium Magnesium Copper iron Manganese 20 M Sample Number Crop ¿Corn Silage ≥25.T/A :Nitrogen/Phosphate/Potash: 180 / 100 / 300 poun 2 tons per acre Banding a portion or all of the phosphate and potash two inches to the side and below the seed level may result in increased yields on soils testing low in either or both phosphorous and potassium. For soils testing medium or higher, either banding or proadcasting are effective methods of application. If fertilizer is placed directly with the seed, do not apply more than 30 pounds per acre of altrogen or nitrogen plus potash to prevent seedling injury and loss of stand. Split applications of nitrogen may be beneficial when nitrogen rates are greater than 120 pounds per acre if nitrogen sources containing urea are not incorporated, some loss of nitrogen may occur if applied to moist soils followed by three or more days of rapidly drying conditions without rainfall. Reduce nitrogen rates following leguminous cover crops. A good crop of crimson clover or hairy vetch in early bloom stage will supply about 50-70 pounds per acre of nitrogen. if zinc was tested and is below 2 pounds per acre, apply five pounds of zinc (approximately 15 pounds zinc sulfate) per acre just prior to planting.

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**Semple Water Buffer De Kong Sulface 19-25 T/A  **Semple Water Buffer Sulface	38	(P) m street	0.51		**************************************		*********	*******		••••	ير د چه د ستان ۱۹۰۹ به د د و و	,	
Attagen/hispshael/cash 150 / So / 240 pounds per acre.  Immessione: 2 port per acre per acre properties of the phosphate and potash two inches to the side and below the seed devel may result in increased yields on soils lesting low in either or both phosphorous and potassium. For soils testing medium or higher, either banding or broadcasting are effective methods of application. If fertilizer is placed directly with the seed do not apply more than 30 pounds per acre of nitrogen or nitrogen plus potash to prevent seeding injury and loss of stand.  Split applications of nitrogen may be beneficial when nitrogen rates are greater than 120 pounds per acre. If nitrogen sources containing ures are not incorporated, some loss of nitrogen may acount if applied to moist soils followed by three or more days of rapidly drying conditions without rainfall.  Reduce nitrogen rates following leguminous cover crops. A good crop of crimson clover or hairy vetch in early bloam stage will supply about 50-70 pounds per acre, apply the pounds of zinc (approximately 15 pounds in early bloam stage will supply about 50-70 pounds per acre, apply the pounds of zinc (approximately 15 pounds in early bloam stage will supply about 50-70 pounds per acre, apply the pounds of zinc (approximately 15 pounds zinc sulfate) per acre just prior to planting.  Country: Carrol  MAI FA 76 24 M 79 L  Sample Number Puller Propheter Petasture Calcium Magnetium zinc Capper in Magnetium zinc 2041  Sample Number Puller Propheter Petasture Calcium Magnetium zinc Capper in Magnetium zinc zinc 2041  Sample Number Puller Propheter Petasture Calcium Magnetium zinc Capper in Magnetium zince aced yellow on soils testing medium or higher, either banding or broadcasting are effective methods of application. If fertilizer is placed directly with the increased yellow on soils testing medium or higher, either banding or broadcasting are effective methods of application. If entilizer is placed directly with the seed, do not apply more than 30 pounds per acre or introgen ra		;90111	Suad	Ø.18-49.J	N/P.C	)./K.o		*******		~~~~~ y _{&lt;=} ###. W.L.		g at the parameter of the	
Limestones   12 tons per acre		Nitroge	MPhos	φλειείΡοιστ	150 / 80	/240 po	unds per ac	re		*********			<b>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</b>
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County: Carroll    County: Carroll									zinc (appr	oximately	15 pounds	s zinc s	ulfate)
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*Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.)

**PPM = Parts per Million
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Visit our web site at http://bioengr.ag.utk.edu/spiltestlab for additional information.

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BURCHAM - Page 10

*Ratings: Indicates relative availability of autrients to plants. (See back of this form for detailed explanation.)

**PPM = Parts per Million

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*				NIP,O	1K,0	*********	~~~	*****			********	
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per acr	e just p	rior to p										
Coun	ity: Car	roll								b Numbe	r:	294414
.50				Mehlich 1		ESTRES			3 <b>S</b> ****			
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nigher, eit	her bar	nding a	r broadca	isting are el	ffective n	nethods of a	pplication	ı, İffertiliz	er is plac	ed directly	with the	9
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		of nitro	open may	be benefic	ial when	nitrogen ral	es are or	eater than	120 pour	ids per acr	e.	
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ollowed b	y three	or moi	re days of	rapidly dry	ing cond	litions withou	ıt rainfall.		********			
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noom stag	ge will s	supply	about 50-	70 pcunds	bet acte	of nitrogen.	<b>3 6</b> 00 0 4 7 W 1 # 1 4 A	· · · · · · · · · · · · · · · · · · ·	^-+ <b></b>	< *************	· *** */4/** *	
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*Retings: Indicates relative availability of outrients to plants. (See back of this form for detailed explanation.)

if zinc	wa cre i	s lest	ed and	is below planting.	/ 2 pound	is per acr	e, apply fiv	e pounds	of zinc (app	proximately	/ 15 pound	s zinc s	uliate)
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higher	pitl	ier ba	andina	or broad	casting a	re effecti	ve method:	s of applic	ation, it fert	unzer is pla	aceo olrect	iy with t	ກ <del>e</del>
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loss of	sta	nd.			- 1	*****	~	***					
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is with				ofaining s	rea are n	ot lacora	oraled so	ne loss of	nitrogen ma	av occur if	applied to	moist s	olls
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"Ratings: Indicates relative availability of outrients to plants. (See back of this form for detailed explanation.)

--PPM = Parts per Million
If you have questions about these recommendations, contact your County Extension office.
Visit our web site at http://bioengr.ag.utk.edu/solitestlab for additional information.

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BURCHAM - Page 13

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***PPM`= Parts per Million

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*	A Diena				N/P ₂ O					, , , , , , , , , , , , , , , , , , ,			
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TOROWED I	y ure	e or m	ore day	'S OT	rabidity of	ying con	ditions with rops. A go	or crop of	ii.	over or h	ain/ veich	in early	**********
hloom sta	na will	rates cunni	i ionown	ig ie sali	gummous ?A nomods	COVELCI	e of nitroge	in Sprint	Cillinanii e	Over a	any vocan	n. com	1
If zinc wa	s toeta	g and	ic helau	v 2 n	o posito	racre a	pply five po	ounds of z	inc (approx	imately 1	5 pounds	zinc sul	fate)
per acre j	ust pri	or to p	lanting.		CO CONTRACTOR		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
				/A			*****	***********					
					H1P.O.11	ζ.Ο	**********		******	( 1 w ** * * * * * * * * * * * * * * * *	********		
j) E	Allrogen	Phospi	iate/Polas	Shaid.	<u>50/80/2</u>	40 poun	ds per acre		*********	· · · · · · · · · · · · · · · · · · ·		,	
	imest	pne:		2	tons per i	1013	two inches	· to the mir	ia and halo	w the se	eri level m	av resu	it in
banoing a	portio	U OL SI	ilo testin	o los	spriate an ur in either	o polasii r or hoth	phosphore	s to the six	ie and belo ilassium. F	or soils to	estina med	iium or	
nicieaseu hicher eit	ticius her ba	ndina	or proac	vy vo dcas	ting are e	ffective n	nethods of	applicatio	n. If fertiliz	er is plac	ed directly	with th	e į
seed do r	of and	ilv mai	re than .	30 o	ounds pei	acre of	nitrogen or	nitrogen	olus potash	to preve	int seedling	g injury	and
oss of sta	nd.	•										*********	
Split applic	ations	of niti	rogen m	ay b	oilened ed	ial when	nitrogen ra	ales are gr	ealer than	120 pour	nds per ac	re.	
fnitrogen	SOUTC	es con	taining	urea	are not in	corporal	ted, some i	loss of nitr	ogen may	occur if a	pplied to n	noist so	ils
ollowed b	y three	or mo	ore days	s of r	apidly dry	ring cond	litions with	out rainfall	•				أستنتين
Reduce ni	trogen	rales	niwoiloi	g leg	guminous	cover cri	ops. A god	od crop of	crimson clo	over or ha	ary vetch i	n early	•
oloom stag	e will	supply	about!	50-7	0 pounds	per acre	of nitroger	1		********	x>+,	• • • • • • • • • • • • • • • • • • • •	
											BURG	CHAM - P	age 14

*Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.)

if zinc	was tes	ted an	d is below planting.	2 pounds	регасге,	apply five p	oounds of	zinc (appro	ximalely	15 pound	s zinc s	ulfate)
	inty: Car		enementa.		> > + + + + + + + + + + + + + + + +		********	· · · · · · · · · · · · · · · · · · ·	4 .	ab Numbe	, 400 ca ca a 116.0 1344	29441
(Pust				Mahimhs	A COMET	cer bce	iii tea	nd RATIN		AD (ADIIID)		2377
			7.00	INETHICITY		(Pounds			20			
Sampli Number	ır pH		P Phosphorus	K Potassium	Ca Calcium	Mg Magnesium	.241	Cu Copper	Fe Iton	Mn Manganese	Organic Matter %	Soluble Salts PPM
37	5.1	7.5	12 L	93 M							1	
Sampl	4				SERECC	MMEND	ATIONS					
Numb			Crop.		zegeme	Abbucaric	ni kare a	nd Timing	<del>-</del> 10-			
37	Com	Silage	>25 TIA	······································		·						
~~~~~~~				N/P,O,	/ K ₂ O			*************		. ******		*****
	Nitroge	n/Phosp Ione:	hate/Potash	180 / 200 2.5 lons p	/ 200 pou	nds per ac	re	· Salanda wang man di	**********	**** *********	e en V.H. Romanno, el se M	********
Bandin				hosphale a	ind potest	i two inche	s to the s	ide and be	ow the s	ed level r	nay res	ult in
								otassium, l				
								on. If fertilit				
seeu, o		ipiy mo	ore than 3	n bonuas b	et scie oi	nitrogen o	r nitroger	plus potas	n to brev	ent seediii	ug injury) and
		e of ni	troman m	w he head	Soial when	nikanan r	mtad nea :	greater than	120 000	inde norm	«««»» ^*	
								trogen may				nile
				of rapidly d					OCCUPIE	ehbuen in	HICHSE S.	Ons
								i crimson c	over or)	airy velch	in early	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
noold	stage will	suppl	y about 50	0-70 pound	s per acre	of nitroge	n,		and the second			
				pounds po	er acre, ar	ply five po	ounds of z	inc (approx	imately	15 pounds	zinc su	liate)
per acre	e just pri	or to pl	anting.			******	******	. ** * * * * * * * * * * * * * * * * *	******	######################################	****	*********
37	JCorn.S	ilage.	19:25.T/A	N1P,O,1			******		,			* b * :
	Nitroogn	Phosoh	ale/Polach	150 / 160 /	K ₂ O	de per ont	.x	**************	****			
				2.5 lons pe		ins 'Kai' ani	S	**************************************	**********			********
Banding	a portio	n or al	of the ph	osphale ar	nd potash	lwo inches	to the si	de and belo	w the se	ed level m	ay resu	It in
ncrease	ed yields	on soi	is testing	low in eithe	er or both p	phosphoro	us and po	otassium. F	or soils t	esting med	iium or	
nigher, e	either ba	nding (or broadca	asting are s	effective m	elhods of	applicatio	in. If fertiliz	er is plac	ed directly	with th	8
seed, do oss of s	o not app	ly mor	e than 30	bonuae be	et acte of t	mrogen or	nitrogen	plus potast	to preve	int seediin	g injury	ano
		of alle	~~~~~~~	ha banafi	riol isthon	······································	tac sta c	reater than	120 000	nde ner ac		
								rogen may				ie - 1
ollowed	n source by three	=ormio	re davs o	frapidly dr	vina condi	ions Witho	out rainfal	logen may . L	Coccit ti c	pphou to i		,
	· • • • • • • • • • • • • • • • • • • •	** * * * * * * * * * * * * * * * * * * *	******		***** ******	******	, «	crimson ck	ver or ha	airy vetch i	n early	
				·70 pounds								
zinc w	s tested	and is	below 2	pounds pe	r acre, app	by five pou	inds of zi	nc (approxi	mately 1	pounds 2	inc sulf	ate)
er acre	just prio	r to pla	nting.	******** . (* * * * * * * * * * * * * *	******	**********						
Count	y: Carrol								100	Number:	29	4420
			<u> </u>	ehlich 1.S				RATINGS				
	ar e				Ga (P	ounds Pe	r Acre) = Zn	Cu	Fe			obabio i
Sample Number		ullor alue Ph	esphorus f	otassium i		agnesium	Zīne	Соррег		langaneso		Salts PM**
2	6.6		12 L	85 [4 [· 7						
30.00					RECON	MENDA	IONS-		324			
ample					ILIMP AD			Timing	新聞	*		
(ממשמו)			rop							······································		
	Grass H	av.a, E	Establish	ment	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	*******				*****		
Ĭ	Vitrogen/P	hosohal	e/Polesh:	N/P ₂ O ₄ /K 0/90/90		r acre			**\$ +*****	~ * * * * * * * * * * * * * * * * * * *	*****	
	Limestor			ime is not i	GCOMME. WANTES DE	uded at this	s lime	*,,,,,	*********	**********		i
••											HAM - Pa	ge 15
	*Doting	4 * 1mai:	ice lar a malor	מונות בניבע ב פי	of nutrien	e to plants	/See back	of this form	for details	d explanatio	n.)	

PPM = Parts per Million
If you have questions about these recommendations, contact your County Extension office. Visit our web site at http://bioengr.ag.utk.edu/soiltestlab for additional information.

сгор.	The se	cond	should be u	ommenda(li	intenance	e of an exis	iting crop.	For future	mainter	rance of th	e new d	סר
				nd recomme							d is re-	tested.
* ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	~ Annu x		***********	tion of legui	mes to gr	ass hay, th	ie tillrogei	n should be	omitted	****		
2	Gra	SS. Ha	y.b. Maint	enance N/P.O	./K.O	*******				*******	********	******
	Milito	gen/Ph	osphote/Potas	m: 60-1667		ounds per	acre	************				**********
****	iLim	eston	3.	Lime Is n	ot recom	mended at	this time	***	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
				of phospha								
				arch 1-30. first cutting.								
15 to S				hi ar comily	, ii iescui	# 19 SUUCAP	neo io nie	ian, apply	uo poun	na oi ia he	acie y	ເຕີດີຄວະ
				especially fo	or fall topo	dressinos.	some loss	of nitroger	nay o	cur if appl	ied to n	roist
solls to	llowed	by the	ree or more	days of rap	oldly dryin	ng condition	is without	rainfall. If	more th	an 4 tons c	if time p	er acre
**********	****	~ * * * * * * * *	only 4 tons	of lime per	acre and	re-test afti	er one ye	ar.	******			
Сош	ity: Ca	rroll								ab Numbe	er:	294421
486			4	Mehilich	SOILT	Control of the Contro	The second secon	The second secon	3S	====	j e e	
Sample	Water	Bulle	, P	X	Ca	Mg Mg	<u>Rer(Acre)</u> Zn	Cu	Fe	Mn	4 Organic Maner	Selubio Selts
Number		Valu		Polossium	Calcium	Magnesium	Zinc	Copper	Iron	Manganese		PPM-
12	6.4		8 L	65 L								
Sample			-									
Number			_Crop	Para Actually	en mue	Application	u karas	nd Timing	a Fe			
12	Gras	s-Clo		e b. Mainte	nance				/=7.454.4	********		
		******		$N/P_2O_x/$	K2O			****				
	Lime			10-90 / 60 / Lime is no				**** 2 ********			********	
The nitr	ogen s	hould	he omitted	on pasture	s containi	ing more th	uis Mus ian 30 bei	rcent clove	r in the s	pring, othe	rwise il	clover
is less ti	han 30	perce	ent of the pa	asture apply	30 poun	ds of nitrog	jen per ac	cre betweer	n March	1-30. For	fall stoc	kpiling
of fescu	e apply	/ 60 p	ounds of N	per acre Au	igust 15 t	to Septerni	per 15 to a	all fescue-c	lover mi	Klures.		
Apply re	comm	ended	amounts o	of phosphate	e and pot	ash in one	application	on anylime	during tr	ne year. If	more tr	ran 4
****	*** *** ***		are require	ed, apply on	ly 4 tons	or mus ber	acie and	18-jest alls		b Number	**********	294422
Conn	ty: Can	Oll		ganlighat.	anie ee	or peci	11 TO - 3	ATING		In Manuae		234722
				Asimona		Pounds					Omanic	Spluble
Sample	Water	B uller	p	к	Св	Mg	Zn	Cu	F¢	Ма	Matter	5alis
Number	PH	Value	Phosphorus	Potassium	Calclum	Magnesium	Zine T	Copper	Iron	Manganese	%	PPM-
17	6.2		4 L	34 L	* occ	MMEND	TIONS					7.2
Sample			Fig. 1	A Fertiliza				d.Tjmingš	36			into anno geni in que interior de la companya de la
Number		······································	Crop									
17	Grass	-Cloy	er Pasture	b. Mainter			www			**********		K M & anny Line N Anne (Life
;	Nitroner	/Phose	hale/Potash:	N/P ₂ O ₄ /1 0-90/60/		is ner acre		*******	****		*****)
	Limes	tone:		Lime is not	recomm	ended at th	nis time	***************************************			********	
he nitro	gen sh	ould t	e omitted o	on pastures	containin	na more tha	an 30 pen	cent clover	in the sp	oring, other	wise if	clover
s less tha	an 30 c	percer	it of the pas	sture apply.	30 pound	is of nitrog	en per aci	re between	March 7	1-30. Port	all stock	spiling }
if fescue	apply.	60 po	unds of N p	oer acre Au	gust 15 lo	Septemb	er 15 to a	II lescue-cl	over mix	tures.		
pply rec	omme	nded:	amounts of	phosphate	and pola	ish in one a	application	n anyume d	inlug m	e year, II n er	note (U)	all #4
			are required	d, apply only	y # tons o	n mie bei	acre and	וביובא מוופו	1 4	o Number:	73	94423
County	r: Carro):[l							#-CI	u ituilles).	· •	

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	,	, i			j,	Vehlich:	I SOILT	(ESTORES)	JĽTS á	nd RATIN	GS:			
	,			<u>نيڭ ئ</u> ى	<u> </u>		27.6	(Pounds I			<u> </u>		Organia	Soluble
	Sample Number			er Je Phosi	P	K Patassium	Ca	Mg	Zn To	Ca	Fe	Mn	Matter 0 %	Balls PPM-
	15	6.2		Priosi	anoms.	7 66 L	Czic)um	Magnesium	Zinc	Copper	Iron I	Manganes	*	
		32.7			700 C	00 6	BER	OMMEND	ΔΤΙΔΝ					
	Sample				16.	Fertili		Applicatio						
	Numbe	r		Çro	D									
i	15	Gra	ss-Clo			injsM.d.s		**********		~~ *** *** ****			*********	******
		Nitro	gen/Pho	sphale/P	otash:	N/P ₂ O ₄	/60 pour	rds per acre	********	*******	****	******		*******
_			estone			Lime is no	ot recom	mended at b	his time	*****			*******	
	The nit	ogen	should	be om	itted (on pasture	s contair	ning more th	an 30 pe	ercent clove	r in the s	pring, oth	envise l	fclover
								nds of nitrog					fall sto	ckpiling
								to Septemb					******************	******
								tash in one					more t	nan 4
1				e are re	drite	o, apply of	ny 4 tons	of lime per	acre and	d re-lest and				201424
j	Coun	ty: Ua	LLOII						···			<u>adımını de</u>	<u>r. </u>	294424
			4.3		M	lehlich 1		EST RESU			10)	اگريون
	Sampla	Water	Buffer	, P		K	Ca	<u>(Pounds P</u>	zu Zu	Cu	Fo	Mo	Organic Matter	ಕಿಸಲಭಂ <i>ತಿ</i> ಕಾರ್ಟಿ
_	Number	pН	Value		orus	Potassium	Calcium	Magnesium	Zinc	Copper	lron	Manganese	%	PPM**
[,	11	5.4		4	L	39 L							1	
P					178.		REC	<u> MMENDA</u>	ZIONS		-			- 100 T
1	Sample Number					Fertiliz	er/Lime	Application	Rate a	id Timing				
-	17	Gras	s-Clas	Crop		b. Mainte	nanco	· · · · · · · · · · · · · · · · · · ·				***************************************	///	
٠.						N/P,O,/	K,0	*****	~~~****	*******	******	~	********	************
		Nkroge	n/Phos	phale/Po	tash::(3-90 (60 (60 poun	ds per acre					·	
			stone:		الــــــار	<u>ime is no</u>	recomm	rended at th	is time	** * * * * * * * * * * * * * * * * * *		****	,	
T	he nitro	gen s	hould t	e omit	ted or	n pastures	containi	ng more tha	n 30 per	cent clover	in the si	anng, ome	rwise it fall stoc	koilina
18	f foerus	anni Panni	percer	ni or ta	f N na	ture apply	aust 15 t	ds of nitroge o Septembe	r 15 in a	ae delween M fescue-ch	nver mix	tures.	ian aluu	roming :
Δ	noly rec	oppi)	bahas	anoun	te of	nhaenhala	and not	o cepternoe ash in one a	ndicalin	n anulime n	turing th	e vear. If	more th	an 4
ic.	ns of lit	ne oe	r acre :	are red	uired.	no vidas.	v 4 tons	of lime per a	cre and	re-test after	rone ve	ar,		
•••	Count	*********		***************************************			A		*********			b Number	,	294425
	1207.11		77: 70		Mr	hlich 145	SOILETIE	STERESUL	TIStant	/RATING		2.75		
		11.10		19-5				Pounds Pe			27 July 20 H		Organic	Spluble
	afqma	Water	Butter	Þ		K	Ça.	Mg	Zn	Cu	Fe	Mn	Matter	Salts PPM
	lumber 5	<u> </u>		Phospho			Calcium	Magnesium	Zinc.	Copper	<u>lron</u>	Manganese	*	
1	a	5.8	7.6	28		20 4 V	nean	MMENDAI	FONO.		1)	* * *	
10000	ample	<u> </u>				Familia	MEGO Meistara	pplication.	II∪INO Rateiani	d Timino -	337			
	umber			Crop		<u>a englise</u>							·····	
1	5	Cool	Seaso	Gras	s Pas	ture a. Es	tablishr	nent/Renov						
	1,	Vitrage:	Phosp	iste/Pott	ነፍስ: (ፕሬ			er acre		************		***********		
	:1	imes	one:		12	tons per a	cre							
Ξa	ch past	ure sa	mple I	ras two	reco	mmendali	ons. The	e first should	i be use	d for new ci	rops or t	o renovate	an exis	រូវរិពព្ធ
Cro	op. The	seco	nd sho	uld be	used	for mainte	nance of	f an existing	crop. F	or future ma	aintenan	ce of the r	iew or	
rei	rovated	crop,	use th	e seco	nd re	commend	ation omi	itting the lim	e (ecom	mendation (part until	the field it	s (è-lesi	ed.
ilf r	enovati	on inv	olves t	ne add	ition (of legumes	to grass	s pastures, t	he nitrog	en should l	be omitte	ed	*******	********
i	5j(ool S	eason	Grass	Pas	ture b. Ma	intenan	ce						
	íÑ	/itrogen	Phosph	ale/Pola				is per acre		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		, Comercia e a C. Condinante		
						ions per a								
	-	+ 1 *** * * * *()	7 • • • • " • • •	********	,	**************************************							CHAM - P	age 17
												War care		-,50

"Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.)

"PPM = Parts per Million
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Apply recommended amounts of phosphate and potash in one application anytime during the year. Apply 60 pounds of nitrogen per acre August 15 to September 15 and from March 1 to March 30. If additional growth is only needed during one season, apply nitrogen for that season only. If fescue is stockpilled in the fall, apply 60 pounds of N per acre August 15 to September 15. County: Carroll 294426 Lab Number: Mahilahd Soll ounds Per Acre Soluble K Ca Ma Zn Cu Sample Water Buffer Matter Salts Number pH Value Phosphorus Potassium Calcium Concer PPM Machanium Zinc hon Manganese 6.1 36 RECOMMENDATIONS Sample Fertilizer/Lime Application Rate and Timing Number Crop iGrass Hay b. Maintenance. N/P,O,/K20 Nitrogen/Phosphate/Potash: 60-165 / 60 / 60 pounds per acre Lime is not recommended at this time Apply recommended amounts of phosphate and potash in one application anytime during the year. Apply 60 pounds of nitrogen per agre March 1-30. Where a second cutting is expected, apply an additional 45 pounds of N per acre immediately after the first cutting. If fescue is stockpiled in the fall, apply 60 pounds of N per acre August 15 to September 15. If urea is the nitrogen source, especially for fall topdressings, some loss of nitrogen may occur if applied to reloist soils followed by three or more days of rapidly drying conditions without rainfall. If more than 4 tons of lime per acre are required, apply only 4 tons of time per acre and re-test after one year. County: Carroll Lab Number: 180 7 - T Mehliche SOIL TEST RESULTS and RATIN Organic Soluble Žn Cu No Sample Salis Butler Matter Number pH Value Phosphorus Polassium Manneshim Cooper Manganese 1/-PPM" 6.6 40 H 230 H **RECOMMENDATIONS Sample Number Crop iGrass Hav a. Establishment. N1P20,1K20 30 / 30 / 30 pounds per acre Limestone: Lime is not recommended at this time Each hay sample has two recommendations. The first should be used for new crops or to removate an existing crop. The second should be used for maintenance of an existing crop. For future maintenance of the new or renovated crop, use the second recommendation omitting the time recommendation part until the field is re-tested If renovation involves the addition of legumes to grass hay, the nitrogen should be omitted. N/P2Os/K2D Nitrogen/Phosphate/Potash: 60-165 / 0 / 0 pounds per acre Limestone: Lime is not recommended at this time Apply recommended amounts of phosphate and potash in one application anytime during the year. Apply 60 pounds of nitrogen per acre March 1-30. Where a second cutting is expected, apply an additional 45 pounds Of N per acre immediately after the first cutting. If fescue is stockpiled in the fall, apply 60 pounds of N per acre August 15 to September 15. if urea is the nitrogen source, especially for fall topdressings, some loss of nitrogen may occur if applied to moist soils followed by three or more days of rapidly drying conditions without rainfall. If more than 4 tons of time per acre are required, apply only 4 tons of time per acre and re-test after one year. 294428 Lab Number: County: Carroll

BURCHAM - Page 18

*Rotings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.)

**PPM = Parts per Million

				Mehlich					NGS*			
			42.0			(Pounds			#.	- NA	Organic	solubio
Sample Number			e Phospher	us Polassium	Ca Calchun	Mg M≥gnesiui	Zn m Zine	Си Соррег	Fe Iron	Mri Manganese	Matter %	Salts PPM**
16	6,4	7	8	L 77 L	7	1 29.000	1 2000		1	1		1
7.5					REC	OMMENI	DATIONS					
Sample	,				izer/Lime				in.			
Numbe	r		Crop_			N. B. H. V.	ion note		3			
16		s-Clo	yer.Pastu	ire.b. Main		·******	** *************		****		********	*****
	F	* # 5 * 400		N/P ₂ O	71K0	****	*********	*******				****
				sh: 0-90 60					******			er to interest minutes
Then		stone:			not recomi				In the m	ning ofha	mailma if	
is less t	par su	nerce	or of the	d or pastur pasture app	es contair Ju 30 nour	iing niore i	man ou pe	ore behave	en March	pring, ours	i wise ii fall etoc	knilina
				A bet acts \							an aloo	ryming
******	******			of phospha				*>	* > * 'Y'X R + + 7 + # # + # + # .		nere th	an 4
				red, apply c							HOIC DE	₩
	ty: Car			THE STEELS					************	b Number	•	294429
	-2-5			Mehlich	i enii m	ections	HISTO -S	M-DATIK				
			10000	inemieli-		Pounds				7.5	A	Soluble
Sample	Water	Buffer	P	K	Cà	Mg	Zn	Cu	Fe	Mn	Organic Matter	Salts
Humber	ρΉ	Value	Phosphoru		Calclum	Magnesium	Zinc	Copper	lron."	Manganese	*	PPM"
1	6.3		<u> </u>	62 L								
and the best of the con-		<u> </u>			RECO	MMEND	ATIONS					
Sample				* Feffili	zer/Lime).	Applicatio	on Rate a	idel iming				
- 4	GESC	Class	Crop	e.b. Mainte	22200		·		······································	······································		
\$ x = 1, + 1 + + + + 1, x x x x.	/921 H = 5	KHIKK	in)ča"i") s	N/P,O _c	урымя / К _г О	4 to 1 to	******	***********				
	Nitroge	n/Phos	ohate/Potasi	0-90/60	/60 pound	is per acro	e				*******	*******
	Limes	tone:		Lime is no	of recomm	ended at	this time	` ~~~ ~~ ~~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	• • • • • • • • • • • • • • • • • • • •			
The nitro	gen sh	ould t	be omitted	on pasture	s containi	ng more th	nan 30 per	cent clove	er in the sp	oring, other	wise if c	lover
is less th	an 30 p	percer	it of the pa	asture apph	y 30 pound	ds of nitrog	gen per ac	re beiwes	en March	1-30. FOR 18	ni Slock	biling ;
				per acre A								
Apply rec	comme	noed	amounts (of phosphated, apply or	e and pou	asn in one of lime per	abblicatio	n ar yume	tor one ver	eyear, n.u er	iole ula	114
***	*****	****	are redniis	an apply of	IIV 4 TOHS	ni ililia bei	Scie allu	(C-1031 G)		Number:	ست	94430
County	/: Carro			Viehlich's	SOURTE	ararai	UATO SEE	O D'A TINK		NUMBER OF STREET		
(<u></u>				<u> Mennensi</u>		Signator Pounds P			33			
Samplo	Water	Buffer	P	ĸ	Ca Ca	Mg	Zη	Cμ	FA		irganic S Valter	iolubis Saits
Number	pΗ	Value	Phosphorus	Potassium	Calcium	Magnesium	Zinc	Copper	tron	Manganese	%	PPK**
13	6.0	7.7	8 L	45 L								
					RECO	MMENDA	ATIONS:					
Sample Number				: Fertiliz	er/Lime A	pplication	ı Rate an	d Timing				
		<u></u>	Crop					~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	·		****	
	arass.	CIONG	r.Hasture	b. Mainte N/P,O _x /	nauce		**********		La Manage + S more : Ka	~	********	
Ş	litrogen/	Phoset	iale/Polash:	0-90 / 60 /		s ner acre	* * * * * * * * * * * * * * * * * * * *		* *******		********	
, ,	imesto			1.5 tons pe		S. B. C. L. C. S. C. C.	~~ . >* ~ * * * * * * * * * * * * * * * * *		* **********			
ne nitroa	en sho	nild be	omitted (on pastures	containin	o more tha	an 30 perc	ent clove	r in the spi	ing, otherw	ise if ch	over
s less tha	n 30 pi	ercent	of the pa	sture apply.	30 pound	s of nitrogr	en per acr	e belweer	n March 1-	30. Fortal	Lstockp	iling
of fescue a	apply 6	0 pau	inds of N	per acre Au	gust 15 to	September	er 15 to al	l fescue-c	lover mixti	Jres.	· · · · · · · · · · · · · · · · · · ·	
apply reco	mmen	ded a	mounts of	phosphate	and pota:	sh in one a	application	anytime	during the	year. If mo	ore than	4
ons of lim	e per a	icre a	re require:	d, apply onl	y 4 tons o	f lime per :	acre and r	e-test afte	er one yea	<u></u>		:
County:									Lab	Number:	29	4431
*												

*Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.)

"PPM = Parts per Million
If you have questions about these recommendations, contact your County Extension office.

Visit our web site at http://bioengr.ag.utk.edu/soiltestlab for additional information.

3.				Mehlich	1301	TEST RESI	California Supplementation of	Access of the party of the second of the second	3\$ <u>*</u>			
			100			(Pounds l					Organic	Soluble
Sample Numbe			r Phosphon	K us Potassiu⊓	Ca Calcium	hig n Magnesium	Zn Zmc	Co Copper	Fe trop	Mn Manganese	Matter %	Saits PPM
FA	6.2	Anin	4 1	96 N		ii iiiigirestaiii	43116		110**	Thomganese	T	T.
2.7/5	3.0.2				The second secon	OMMEND	PHONE					100
Sampl	e			Fedi		e Applicatio			7.53			
Numbi	7		Crop					174111111111111111111111111111111111111				
8A	Coo	Seas		Pasture b	. Mainter	nance						
Maka * 4 4 * 1 * 1				NIP,C	0,1K,0		********					
				h: 60-120/	60/30 p	ounds per ac	ore		*********			********
********	:Lime	stone;		Lime is .	not recom	rnended at t	nis time	*********			**************************************	
Apply	recomm	nendec	amounts	of phosph	ate and p	otash in one	application	in anytime	dunng in	ie year. Ap	oply 60	
pounds	s of nitro	ogen F	er acre A	ugust 15 to	Septemb	er 15 and fro	March	TO Marci	13U. Ha	ooinousi d	rowin is	i oniy osta si
					a ioi insi	season only.	. If tescu	э із зіоскр	iiea ili nie	s iaii, appiy	ou pou	inus oi
****		~~~~~~	5 to Septe	*************	······································		******	*************) factorist to	*************		******
	Gras	s.Hav.	a. Establ	ishment. NJP,0	1167			· ************************************				
-444	Niltoo	en/Phos	phate/Polas	h 30 / 90 /	80 naunc	ls per acre	*****	4 + > + + + + + + + + + + + + + + + + + 	. Service de la graphica de la compansión de la compansió	*********	•***********	
4.85 (8	*******	stone:				mended at th	nis time			*************		
Each h	av sam	ed elo	s two reco	mmendati	ons. The	first should b	e used to	or new crop	s or to re	enovate an	existing	7
сгор. Т	he sec	ond sh	nould be u	sed for ma	intenance	of an existing	io crop. I	or future r	naintenai	nce of the i	NEW OF	
renoval	led crop	, use	the second	d recomme	endation c	mitting the li	we tecou	mendation	part unt	il the field	s re-les	ted.
ilf renov	ation in	volves	the addit	ion of legu	mes to gr	ass hay, the	nitrogen s	should be d	mitted.			
8A	Gras	s Hav	b. Mainte	nance							,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	*******			N (P,O			*****	****		********	********	
			phate/Potes!	n: 60-165/.	60/30 pc	ounds per ac	re	**** *********	/##*****	*******	~ ~ ~	
,	Limes	stone:		:Lime is n	ni racami	manner at m	e iime					
				A STATE OF THE STA	A.C. 1. A.C. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	mended at th	22-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-		dermina the	- waar An	mbr GO	
Apply re	100 mm	ended	amounts i	of phospha	ite and po	tash in one a	application	n ar ylime (during the	e year. Ap	ply 60 winds 0	 f N
pounds	of nitro	gen pe	amounts i	of phospha irch 1-30.	ite and po Where a	stash in one a second cuttir	application or is expe	icted, apph	y an eddi	uonal 45 pi	ounas u	f N
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"Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.)

"PPM = Parts per Million
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Each h	av sam	iole ha	s Iwo reco	ommendati	ons. The	first should	i be used i	for new cro	ops or to	renovate a	ın existi	ing
crop. T	he sec	ond sl	hould be u	sed for ma	intenance	e of an exis	ting crop.	For future	mainter	ance of the	e new o	τ_
renova	led cro	p. use	the secon	d recomm	endation (omitting the	lime reco	mmendatio	on part u	ntil the field	d is re-u	ested.
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0B	Gras	s Hay	b. Mainte	nance				*****		*****		
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Apply re	comm	ended	amounts	of phospha	ate and po	otash in one	application	on anytime	during	he year. 🎤	opply 60	ACL!
pounds	of nitro	gen p	er acre Ma	erch 1-30.	Where a	second cut	ting is exp	iecled, app	oly an ao	ditional 45	pounds	UFN
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crop, in	3 80001	าต รกอ	nio de use	eo for main	detion on	of an existing the li	ig crop. r	mendation	nad Ho	til the field :	is re-les	ted :
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*Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.)

**PPM = Parts per Million

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			source, esp	necially for	fall topdr	essinos si	ome loss	of nitrogen	may oc	our if applie	ed to mo	ist
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are requ	red, ar	oply on	ly 4 tons of	lime per a	cre and r	e-lest after	one year	•				
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francust	on inv	nivae ti	ne addition	of legumes	s to grass	pastures	the nitroc	en should	be omit	ed		************
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Burcham - Page 22

"Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.)

"PPM = Parts per Million

If you have questions about these recommendations, contact your County Extension office.

Visit our web site at http://bioengr.ag.utk.edu/soiltestlab for additional information.

needed during one season, apply nitrogen for that season only. If fescue is stockpiled in the fall, apply 60 pounds of N per acre August 15 to September 15. Lab Number: 294436 County: Carroll Mehlich 1 SOL ounds Per Acre) Sale blo Organic Mg Cu Sample Water Buffer Ca Zn Matter Salts PPM Number Phosphorus Polassium Calcium Copper Manganese Value Zinc pH Magnesium 24 M 6.6 RECOMMENDATIONS Sample Fertilizer/Lime Application Rate and Timing Number Crop Grass-Clover Pasture a. Estab JRenovation N/P,O,/K,O 30 / 60 / 60 pounds per acre Lime is not recommended at this time Each pasture sample has two recommendations. The first should be used for establishment of new crops or to removate an existing crop. The second should be used for maintenance of an existing crop. For future maintenance of the new or renovated crop, use the second recommendation omitting the lime recommendation until the field is retested. If renovation involves the addition of legumes to grass pastures, the nitrogen should be omitted. 10 Grass-Clover Pasture b. Maintenance N/P,O,/K.O Nicogen/Phosphate/Potash: 0-90 / 30 / 30 pounds per scre ¡Limestone: ¡Lime is not recommended at this time The nitrogen should be omitted on pastures containing more than 30 percent clover in the spring, otherwise if clover is less than 30 percent of the pasture apply 30 pounds of nitrogen per acre between March 1-30. For fall stockpiling of Sescue apply 60 pounds of N per acre August 15 to September 15 to all fescue-clover mixtures. Apply recommended amounts of phosphate and potash in one application anytime during the year. If more than 4 tons of lime per acre are required, apply only 4 tons of lime per acre and re-test after one year. Lab Number: County: Carroll Mehlicha SOIL TEST RESULTS and RATINGS Pounds Pê Organic Soluble Cu Salts Zn Mg Matter Sample Water Buffer 1 tron Manganese Number Copper μН Value Phosphorus Potassium Calcium Liagaesium 6.3 7.0 RECOMMENDATIONS Fertilizer/Lime Application Rate and Timing Sample Number Com Silage >25.T/A N1P,O,/K,O Nitrogen/Phosphate/Polash: 180 / 200 / 300 pounds per acre. Lime is not recommended at this time Banding a portion or all of the phosphate and potash two inches to the side and below the seed level may result in increased yields on soils testing low in either or both phosphorous and potassium. For soils testing medium or higher, either banding or broadcasting are effective methods of application. If fertilizer is placed directly with the seed, do not apply more than 30 pounds per scre of nitrogen or nitrogen plus potash to prevent seedling injury and loss of stand. Split applications of hitrogen may be beneficial when hitrogen rates are greater than 120 pounds per acre if nitrogen sources containing urea are not incorporated, some loss of nitrogen may occur if applied to moist soils followed by three or more days of rapidly drying conditions without rainfall. Reduce nitrogen rates following leguminous cover crops. A good crop of crimson clover or hairy vetch in early bloom stage will supply about 50-70 pounds per acre of nitrogen. If zinc was tested and is below 2 pounds per acre, apply five pounds of zinc (approximately 15 pounds zinc sulfate) per acre just prior to planting.

Apply recommended amounts of phosphate and potash in one application anytime during the year. Apply 60 pounds of nitrogen per acre August 15 to September 15 and from March 1 to March 30. If additional growth is only

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NOTICES OF INTENT, WAIVERS AND AGREEMENTS

Agreement for Removal of litter, manure and/or Process Wastewater from an AFO (Based on Appendix A of: TDEC Division of Water Pollution Control, Chapter 1200-4-5 Permit Effluent Limitations and Standards, July 2004).

manure	aditions listed below help to protect water quality. These conditions apply to litter, and/or process wastewater removed from an AFO. The material covered by this ent was removed on
	from the facility owned by, located at
Α.	The litter, manure and/or process wastewater must be managed to ensure there is no discharge of litter, manure and/or process wastewater to surface or ground water.
	When removed from the facility, litter, manure and/or process wastewater should be applied directly to the field or stockpiled and covered with plastic or stored in a building.
	Litter, manure and/or process wastewater must not be stockpiled near streams, sinkholes or wells.
	Fields receiving litter, manure and/or process wastewater should be soil tested at least every two or three years.
	A litter, manure and/or process wastewater nutrient analysis should be used to determine application rates for various crops.
	Calibrate spreading equipment and apply litter, manure and/or process wastewater uniformly.
G.	Apply no more nitrogen than can be used by the crop.
	A buffer zone is recommended between the application sites and adjacent streams, lakes, ponds, sinkholes and wells.
1.	Do not apply litter, manure and/or process wastewater when the ground is frozen, or on steep slopes subject to flooding, erosion or rapid runoff.
J.	Cover vehicles hauling litter, manure and/or process wastewater on public roads.
	Keep records of locations where litter, manure and/or process wastewater will be used as a fertilizer.
l,	am the person receiving litter, manure and/or process
(name)	wastewater and I understand the conditions listed above.
(signati	ure) (date)

(address)

(phone)

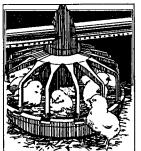
NUTRIENT BUDGET CALCULATOR OUTPUT

MANURE STORAGE PLANS AND COMPOSTER BUILDING SPECIFICATIONS

SWINE WASTE MANAGEMENT SYSTEM CONSTRUCTION SPECIFICATIONS

Prepared for

JERRY BURCHAM SWINE OPERATION



In



Carron County, Tennessee

In cooperation with

Carroll County Soil & Water Conservation District
And
United States Department of Agriculture
Natural Resources Conservation Service

11.1. <u>Scope</u>

This specification shall consist of the clearing, grubbing, excavation, backfill, concrete, forms, reinforcing steel, timber, trusses, sheet metal roofing, fasteners, other appurtenances and services required for the construction of waste storage or waste conveyance structures (i.e., dry stacks, composters, tanks, flumes, etc.) and the disposal of all cleared and excavated materials. All materials must be sound and of good quality with a minimum life expectancy of not less than 10 years. Construction shall be carried out in such a manner that erosion, water, air, and noise pollution will be minimized and held within legal limits as established by state and federal regulations. All structures shall be constructed according to plans furnished by the Natural Resources Conservation Service (NRCS) and in accordance with NRCS's engineering standards for these practices, as well as local building codes and current industry standards. Any deviation from the approved drawings and specifications must be approved by the engineer prior to construction.

11.2. CLEARING

All trees, brush, stumps, boulders, rubbish and manure shall be removed from the foundation, storage, and spoil area(s) before excavation is performed. All material cleared from the area shall be disposed of by burning or burying on-site or hauling to an appropriate landfill. All burning shall conform to state and federal laws and regulations. Trees and other cleared vegetation will be cut flush with the ground surface in spoil areas. The foundation and/or storage area will have all stumps, roots and vegetation removed. The general area around buildings will also require grubbing as necessary to complement the use intended for the structure. The limits of the grubbing will be staked by the engineer or his/her agent.

11.3. EXCAVATION

Top soil excavated from the site will be stockpiled for later placement around the completed structure. Soils containing excessive organic material will be removed from the foundation area. The completed excavation and placement of spoil material shall conform as nearly to lines, dimensions, grades, and slopes shown on plans or staked on the ground as skillful operation of the excavating equipment will permit. Generally, spoil will be placed and spread to blend with the existing terrain of the spoil area. Runoff from outside drainage areas will be diverted away from the excavation area.

Excavated surfaces too steep to be safe and stable if unsupported shall be supported as necessary to safeguard the work and workmen, to prevent sliding or settling of the adjacent ground, and to avoid damaging existing improvements. The width of the excavation shall be increased as necessary to provide space for sheeting, bracing, shoring, and other supporting installations. When the work is completed, such supporting installations shall be removed.

11.4. EARTHFILL

11.4.1. Placement

Earth material placed for pads, flooring, liners or foundations shall be good sandy clay or clayey sands and gravels free of detrimental amounts of sod, roots, large stones, and other objectionable material. Highly plastic clay soils should be avoided.

Begin placing and spreading the fill material at the lowest point of the foundation and bring the fill up in approximately horizontal layers not exceeding 9 inches loose thickness. These layers shall be reasonably uniform in thickness and shall extend over the entire area of the fill. Each layer shall be

compacted by 4 complete passes with a 250 psi sheep foot roller or other equivalent methods approved by the engineer or his/her agent.

If a minimum required density is specified, each layer of fill shall be compacted as necessary to obtain that required density. All finished work shall be left in a neat and sightly condition. The outer edges and slopes of the fill shall blend with the surrounding landscape and complement the structure built upon it.

11.4.2. Moisture Control

All fill material shall have sufficient moisture content for the required compaction. Fill material which is too dry shall be moistened by adding water or by thoroughly mixing with moist fill until an acceptable moisture level is obtained. Fill material which is too wet shall be allowed to dry out naturally or shall be dried by disking or shall be thoroughly mixed with dry fill material until an acceptable moisture level is obtained.

The moisture content of the fill shall be maintained within the limits to:

- 1. Prevent bulking or dilatance of the material under the action of the hauling or compacting equipment.
- 2. Prevent adherence of the fill material to the equipment.
- 3. Ensure the crushing and blending of the soil clods and aggregation into a homogeneous mass.
- 4. Contain adequate moisture so that a sample can be hand molded without the mold oozing through the fingers or squeezing out any water.

11.5. WATER SUPPLY

A water source shall be available at the facility.

11.6. TIMBER FABRICATION AND INSTALLATION

Above ground timber structures, such as manure dry stack facilities, shall be constructed on a firm foundation to the lines and grades shown on the plans. Dimensions and spacings shown on the plans and drawings are minimum requirements for the 25-year wind and snow loads. These dimensions and spacings may be altered if the result is a stronger structure, with prior approval of the engineer. In no case will the dimensions and spacings be modified in a way which would reduce the strength of the structure. All framing shall be true and exact. Timber shall be accurately cut and assembled to a close fit. Appropriate bracing for safety and structural stability during construction shall be used.

11.6.1. Wood and Timber

All material shall be sound wood, free from decay, and of new quality. Good quality, used, pressure-treated lumber may be utilized for walls of composter bins and dry stack storage areas. All structural timber shall be dense, structural quality, and graded in accordance with the Standard Grading Rules for Southern Pine Lumber. Unless otherwise specified, all timber and lumber shall be furnished in American Standard dressed sizes. All sizes specified are nominal sizes. All structural timber, posts, poles, and lumber, except roof girders, rafters, purlins, trusses, knee braces, and attic bracing shall be pressure treated. Treated timber and lumber shall be impregnated with the specified type and quantity of preservative and conform to Federal Specification TT-W-571. The minimum net retention of the common preservative, chromated copper arsenate shall be 0.4 lbs/cf (pcf) for dimension lumber used above ground. For structural posts or timbers in contact with the ground, 0.6 pcf is recommended. Lumber used for walls of composting bins and dry stack storage areas may be treated to a 0.4 pcf level.

Post and poles shall be set plumb and to the depths shown on the drawings. Backfill around posts/poles shall be concrete as shown on the drawings or shall be hand tamped earth if allowed on the drawings. Post/poles shall be temporarily braced until girders, plates, or other members are installed to maintain plumb alignment. All wood and timber shall be No. 2 Southern Pine or better (nondense No. 2 is not acceptable). All wood and timber shall be pressure treated except purlins, trusses, rafters, girders, and overhead braces.

11.6.2. Handling and Storing

All timber and lumber stored at the site of the work shall be neatly stacked on supports at least 12 inches above the ground and protected from the weather by suitable covering. Untreated material shall be so stacked and stripped as to permit free circulation of air between the tiers and courses. Treated timber may be close-stacked. The ground underneath and in the vicinity of all stacks shall be cleared of weeds and rubbish. The use of cant hooks, peavies, or other pointed tools except end hooks, will not be permitted in the handling of structural timber or lumber. Treated timber shall be handled with rope slings or other methods which will prevent the breaking or brushing of outer fibers, or penetration of the surface in any manner.

11.6.3. Fasteners

Connections between wood members requiring bolts may be initially done with appropriately sized nails until such time as it is expedient to add the bolts, unless specified otherwise in the drawings. Bolts shall be added as soon as practicable, before the building is declared structurally sound, and before being accepted as complete. Nails and spikes shall be driven with just sufficient force to set the heads flush with the surface of the wood. Holes for machine bolts shall be bored with a bit of the same diameter as the bolt. Appropriately sized washers shall be used in contact with all bolt heads and nuts that would otherwise be in contact with the wood.

Spiral or annular ring shank nails shall be used in all connections of pressure treated wood. Nails to fasten rafters, girders, cleats, scabs, wooden sidewalls, and/or braces to the pressure treated poles shall be 20d to 40d size or as specified on the drawings. Untreated framing members shall be fastened to each other with 16d to 20d nails. Examples include roof purlins to rafters, and tie-down cleats or braces to rafters or girders. Various galvanized metal fasteners, with appropriate joist or deck nails, may be used to facilitate assembly, as approved by the engineer. All bolts, washers, nuts, nails, and other hardware exposed to rain or animal wastes shall be galvanized unless otherwise specified.

11.7. ROOFING

Roofing shall be galvanized metal in standard lengths and widths. Roofing material shall be a minimum of 29 gauge and double ribbed. Roofing shall be installed in accordance with manufacturer's recommendations. If any other type of roofing material is desired, it must first be approved by the engineer. Nails used to attach the roofing material to the purlins shall be lead-headed nails, aluminum nails with neoprene washers, or other type as approved by the NRCS approving authority. The contractor shall provide the Landowner and NRCS with a certification stating that the material meets the above requirements.

11.7.1. Trusses

Trusses shall be CANTILEVER type. Trusses may be metal or wood and shall be designed to handle a minimum of 25 pounds per square foot and shall be installed on the spacing compatible with the design. Trusses shall have a minimum of 12 inches of overhang. Trusses may be pre-fabricated, manufactured trusses.

Manufactured trusses will be installed in accordance with the manufacturer's instructions. All trusses will be of a design approved by a registered professional engineer. A copy of the truss certification shall be provided to the NRCS approving authority prior to truss installation. Truss anchorage and associated supports shall be as shown on the drawings or other acceptable methods as approved by the engineer.

11.8. GUTTERS

Composter and Manure Storage Facility - Guttering is required over the composter portion of the structure and optional over the remainder of the building. Guttering shall be 6 inch seamless aluminum. For the composter portion of the building, if longer than 40 feet use two downspouts with gutter sloped from the center of the structure to each end with a downspout at each end. For a building less than 40 feet, one downspout is required. For the optional portion of the building, if longer than 56 feet use two downspouts with the gutter sloped from the center of the structure to each end with a downspout at each end. For a building less than 56 feet, one downspout is required. If guttering is not used, the drip line will need to be protected using a one foot wide by eight inch deep gravel pad lined with geotextile.

Manure Storage Facility - Guttering is optional. If used, guttering shall be 6 inch seamless aluminum. For a building longer than 56 feet use two downspouts with gutter sloped from the center of the structure to each end with a downspout at each end. For a building less than 56 feet, one downspout is required. Guttering is optional. If guttering is not used, the drip line will need to be protected using a one foot wide by eight inch deep gravel pad lined with geotextile.

11.8.1. Materials

Gutters and downspouts shall be made of aluminum or galvanized steel. Galvanized steel shall have a minimum thickness of 0.027 inches and the downspout shall have a minimum thickness of 0.020 inches. Gutters shall be a minimum of 6 inches and of standard shape. Galvanized steel gutters shall not be used with aluminum downspouts and aluminum gutters shall not be used with galvanized steel downspouts. Spikes and ferrules shall be made of corrosion resistant materials. Spikes shall be a minimum of 8-inches long and a 1/4 inch in diameter. Ferrules shall be compatible in length with the top width of the gutter. Rock filled trenches shall be backfilled with natural rock. The rock shall be poorly graded (all rock fragments of approximately the same size) and free of appreciable amounts of sand and/or soil particles. Crushed limestone shall not be used for backfill unless it has been washed. Any plastic corrugated drain tubing shall meet the requirements of practice standard and specification 606 - Subsurface Drains.

11.8.2. Fabrication

Continuous gutters may be formed at the installation site with cold forming equipment. As many joints shall be eliminated as possible and practical. Lap joints are more commonly used and should be used in lieu of butt joints on long runs. The joint method shall be most compatible and applicable to the material used and the specific application. Joints shall be made watertight by sealing with mastic compatible with the gutter material or by soldering. All soldered joints shall be watertight, smooth and exhibit a workmanlike appearance.

11.8.3. Installation

Gutters shall be installed at the locations shown on the plans or approved in the field. The fabrication shall be inspected and approved before the gutters are hung. Gutters shall be hung by the method shown on the plans or approved by the NRCS Representative. Gutters may be supported by spike and ferrule, strap hangers or shank hangers. Spike and ferrule is not recommended if girth of gutter exceeds 15 inches. Girth is the width of sheet metal from which gutter is fabricated. Gutters

shall be fastened to a structural member of the building. Spikes shall be driven in to the end of rafters or truss top chord member. Straps and bracket hangers may be nailed into the sheathing but should also be nailed into the rafters. The maximum spacing of gutter supports shall be 48 inches for galvanized gutters, 32 inches for aluminum. Maximum support spacing shall be one-half of that previously stipulated when ice and snow is a problem. The bottom slope shall be 1/16 inch per foot or steeper.

Downspouts shall be securely fastened to posts, walls, or other building support members. Downspouts shall be securely fastened at the top and bottom. Intermediate supports shall be installed that are a maximum of 10 feet apart. Intermediate supports shall be installed at any joints in the downspout. Downspout supports shall be compatible with the downspout shape and sufficiently stable to support the downspout full of ice or water. Downspouts shall be of the same material as the gutters. Outlet tubes shall be securely fabricated into the gutter. The outlet tube shall not serve as a restriction and its cross-sectional area shall be approximately equal to that of the downspout. Outlet tube installation shall be watertight and equally as strong as the gutter and downspout.

11.8.4. Outlets

Roof runoff systems shall outlet at a location that will not flood other facilities, produce erosion or scour or permit the runoff to enter unprotected areas. The outlet shall be protected from livestock, machinery or other damage. Outlets that will cause erosion shall have splash blocks or other impact absorbing measures installed. Pipe used to carry guttered water away from the building may be PVC DWV pipe to meet ASTM D2665 or better. All pipe must be protected in such a manner as to protect it from damage from animals and equipment.

11.9. CONCRETE

11.9.1. Design Mix

The concrete mixture shall contain a minimum of six bags of cement per cubic yard. The water content shall not exceed 6 gallons per bag of cement in the mixture. The concrete mixture shall have a minimum 28 day compressive strength of 3000 psi. Portland cement shall meet the requirements of ASTM Specification C150. Aggregates shall meet the requirements of ASTM Specification C33. Clean water shall be used in the mix. Calcium Chloride and other chemical admixtures for concrete will not be accepted unless expressly specified in the drawings or specifications, or approved by the approving official. Fly ash (pozzolans) may be used and shall conform to ASTM C618. Fly ash shall be limited to 20% by weight.

Minimum cement (cement plus fly ash) to be used shall be 470 pounds (5 bags) per cubic yard. Aggregates shall meet the requirements of ASTM C33. The maximum coarse aggregate size shall be one inch. (#57 stone). The concrete shall contain an air entraining admixture meeting the requirements of ASTM C260.

The air content of the concrete at placement shall be 6 % \pm 1%. The concrete supplier shall provide a certification of the mix delivered. The certification shall state the types and amounts of cement, water, admixtures, aggregates, etc. added. Concrete shall be consolidated with internal type mechanical vibrators capable of transmitting vibration to the concrete at frequencies not less than 6,000 impulses per minute. The location, manner, and duration of the application of the vibrators shall be such as to secure maximum consolidation of the concrete without causing segregation of the mortar and coarse aggregate, and without causing water or cement paste to flush to the surface.

Vibration shall be applied to the freshly deposited concrete by slowly inserting and removing the vibrator at points uniformly spaced and not farther apart than twice the radius over which the vibration is visibly effective. The vibrator shall extend into the previously placed layer of fresh concrete, at all points, to insure effective bond between layers. The use of vibrators to transport concrete within the

forms will not be permitted. In extreme conditions it may be necessary to: (1) Restrict placement to late afternoon or evening; (2) Restrict the depth of layers to assure coverage of the previous layer while it will respond readily to vibration; (3) Suspend placement until conditions improve; and (4) Remove forms, repair, patch, and re-apply wet curing on small areas at a time.

11.9.2. Consistency

The amount of water used in the concrete shall be the minimum necessary to obtain the required workability. The consistency of the concrete shall be such that it can be worked readily into the corners and angles of the forms and around reinforcement but without permitting the materials to segregate or excess free water to collect on the surface. The slump shall be between 2-5 inches as tested by "The Test for Slump for Portland Cement Concrete", ASTM Specification C-143. The air content of the concrete at time of placement shall be $6\% \pm 2\%$. Air entraining admixtures shall conform to ASTM Specification C-260.

11.9.3. Fiber Reinforced Concrete

Fiber shall consist of virgin homopolymer polypropylene fibers, either the collated fibrillated type or the monofilament type. The minimum rate of application is 1.5 lbs. of fiber per cubic yard of concrete.

The addition of fiber to a concrete mix may cause an apparent reduction in slump. However, no additional water shall be added to the mix to improve workability. If needed, a high-range water reducing admixture (<u>super</u> plasticizer) should be added to the concrete mix. During placement the fiber mix will generally require more effort and vibration to move the mix and consolidate it into the forms due to the lower slump nature. Properly controlled internal vibration is acceptable, but external vibration of the forms and exposed surfaces are preferable to prevent fiber segregation.

If welded wire fabric is omitted from concrete slabs and only fiber additives are used, contraction joint spacing will be reduced from a maximum of 30 feet to a maximum of 10 feet in any direction. Sawed joints shall be 1/4 of the slab's thickness in depth. Formed joints shall be the keyway type. Smooth vertical joints through the slab are not permitted. Fiber additives in concrete do not take the place of structural steel reinforcement. Where steel reinforcement is shown on drawings it shall be placed as shown.

11.9.4. Forms

Forms shall be of wood, steel, or other approved material. Forms shall be true to line and grade, mortar tight, and sufficiently rigid to prevent objectionable deformation under load. Form surfaces shall be smooth, free from irregularities, dents, sags, or holes when used for permanently exposed surfaces. Rods used for internal ties shall be so arranged that, when the forms are removed, metal will not be less than 1 inch from any concrete surface. Forms for walls and vertical sections 2 feet high and taller shall be stabilized with adequate tie rods, walers, cat-heads and sufficient bracing to prevent shifting or movement of forms during placing of concrete.

Forms for exposed surfaces shall be coated with a non-staining form release agent which shall be applied before the concrete is placed. All excess release agent on the form surfaces and any on surfaces requiring bonding with concrete shall be removed.

All form removal shall be accomplished in such a manner as to prevent injury to the concrete. Forms for floor slabs and such work may be removed after a minimum of 24 hours. Forms for walls shall be left in place for a minimum of 3 days. All forms must be removed before final inspection of the work. All repair work must be done immediately after removal of forms.

11.9.5. Timing and Temperature

Concrete shall be placed within 1-1/2 hours after introduction of water to the cement and aggregates. Concrete shall not be placed when the outside temperature is expected to fall below 40°F at the time the concrete is delivered and placed at the work site. Concrete shall not be exposed to freezing temperatures during the curing period.

Concrete, when deposited in the forms during hot weather, will have a temperature not greater than 90°F at the time of placement. Ice may be used as a portion of the mixing water to control temperature provided all ice is melted in the mixing process. When the outside temperature reaches or exceeds 90°F, the concrete shall be placed within 45 minutes after batching. A longer time may be allowed, provided the setting time of the concrete is extended a corresponding amount by the addition of an approved set retarding admixture.

11.9.6. Conveying and Placing

No concrete shall be placed until the approving official has given approval of the in-place sub grade, forms, reinforcing steel, and any other items involved or affected by the concrete placement.

Concrete shall be conveyed from mixer to forms as rapidly as practicable by methods which will prevent segregation or loss of ingredients. Hoppers and chutes, pipes, or "elephant trunks" may be used. There shall be no vertical drop greater than 5 feet.

Unless otherwise authorized, all concrete shall be placed upon clean, damp surfaces free from frost, ice, standing and running water, and never upon soft mud, dried porous earth, or fill that does not meet specified compaction requirements. Soft mud or other unacceptable foundation material shall be removed and replaced with gravel or other approved material.

Concrete shall be deposited as close as possible to its final position in the forms. Concrete shall be thoroughly consolidated by rodding or mechanically vibrating the concrete in place supplemented by hand-spading and tamping to remove air voids. Vibrating equipment shall be used when pouring walls and other thin sections.

Concrete floor slabs may be placed at one time or may be poured in sections at different times. When steel reinforcement is specified for the floor slab, formed contraction joints shall be placed at intervals not to exceed 30 feet in any direction unless otherwise specified. When steel is not used, joints shall be as specified under Fiber Reinforced Concrete. The formed edges of each section shall be keyed to lock the edges of adjacent sections together. The edge forms may be removable metal or wood forms having the required keyed shape or may be thin galvanized metal designed to be left in place. Smooth vertical edged joints will not be allowed.

11.9.7. Finishing

Defective concrete, honeycombed areas, voids left by the removal of tie rods, and unacceptable ridges left on concrete surfaces shall be repaired immediately after the removal of forms unless otherwise authorized and directed. Voids left by the removal of tie rods shall be reamed and completely filled with mortar.

Defective concrete shall be repaired by cutting out the unsatisfactory material and placing new concrete which shall be secured with keys, dovetails or anchors. Excessive rubbing of formed areas will not be permitted. All unformed surfaces of concrete, exposed in the completed work, shall have a wood float finish without additional mortar.

11.9.8. Curing

Concrete shall be prevented from drying for a curing period of at least 7 days after placement. All exposed surfaces of concrete shall be protected from the direct rays of the sun for at least these first 7 days. All concrete shall be cured by keeping continuously moist for the entire curing period, or until curing compound is applied. Moisture shall be maintained by sprinkling, flooding, fog spraying, or by covering with materials kept continuously moist such as canvas, cloth mats, straw, sand, polyethylene, or other approved material.

Wood forms (except plywood) left in place during the curing period shall be kept wet. Formed surfaces shall be thoroughly wetted immediately after forms are removed and shall be kept wet until patching and repairs are completed. Water or covering shall be applied in such a way that the concrete surface is not eroded or otherwise damaged.

If curing compound is used, two coats shall be applied to all concrete surfaces except construction joints and surfaces to which other concrete will be bonded. The compound shall be sprayed on the moist concrete surfaces as soon as free water has disappeared, but shall not be applied to any surface until patching, repairs and finishing of that surface are completed. Curing compound shall meet the requirements of ASTM Specification C-309, Type 2, white pigmented.

11.9.9. Expansion joints

Expansion joint material shall not extend above adjacent concrete surfaces. Expansion joint material shall be the preformed, bituminous type meeting the requirements of ASTM D994 or D1751.

11.10. STEEL REINFORCEMENT

Reinforcement steel and welded wire fabric shall be new, clean, and free of oil, grease, paints, and flaky rust. Steel bars for concrete reinforcement shall be deformed billet-steel bars, conforming to ASTM Specification A-615, Grade 40 or 60. Welded wire fabric shall conform to the requirements of ASTM Specification A-185.

Reinforcement steel shall be accurately placed as specified and secured in position in a manner which will prevent its displacement during placement of the concrete. If reinforcing steel is spliced, the splices shall provide an overlap equal to 30 times the diameter of the smaller bar in the splice and shall be tied at both ends of the splice. Steel reinforcement in concrete block walls shall be tied in place prior to laying the blocks. Dropping or placing required steel reinforcement into the holes of concrete blocks without properly overlapping and tying the steel together with the foundation steel is not acceptable. Field bending of steel will be permitted. When steel is heated for bending, it must be allowed to air cool back to ambient temperature. Steel shall not be fast-cooled with water or air.

Reinforcement steel and welded wire fabric shall be suspended off the ground and other concrete contact surfaces by using support blocks of concrete bricks, concrete blocks or pieces of blocks, wire stands, or other approved method prior to the placing of concrete. Support blocks of stone, wood materials, earth, earth clods, clay bricks, scrap metal and other unapproved materials are not acceptable. During concrete placement welded wire reinforcement shall be pulled into the middle of the concrete or the position shown in the drawings. Unless otherwise specified, welded wire fabric shall be spliced in the following manner:

Adjacent sections shall be spliced by overlapping a minimum of one full mesh plus 2 inches, or 6 inches, whichever is greater. The splice length shall be measured from the center of the first transverse wire in one piece of fabric to the center of the first transverse wire in the lapped piece of fabric.

11.11. GRAVEL

Gravel under the concrete structures shall meet the requirements of coarse aggregate conforming to AASHTO M43, size 57. The gravel under the concrete shall be compacted by at least one pass of the track or wheels of the placing equipment over the entire surface of the gravel area.

11.12. GEOTEXTILE

Geotextile shall be non-woven with a minimum tensile strength of 150 pounds MARV (minimum average roll value) and weighing a minimum of 6 ounces per square yard. It shall be installed according to the manufacturer's recommendations. The minimum lap distance shall be 24 inches. Equipment shall not be allowed to operate directly on top of the geotextile fabric without a cushion of gravel. Geotextile may be used underneath the gravel entrance pad, but is not required.

11.13. SAFETY AND HEALTH

During construction, hard-hats, rollover protection systems (ROPS), and seat belts which meet OSHA requirements should be used on and around all equipment. All local, State, and Federal laws and regulations shall be followed. Special emphasis shall be given to the requirements contained in OSHA's Construction Regulations.

11.14. Systems Revisions or Modifications

Any revisions or modifications to the drawings and/or specifications shall be approved by the NRCS Engineer, in writing, prior to implementation.

11.15. LANDSCAPE AND VEGETATION

The area adjacent and in the immediate vicinity of the structure shall be shaped to blend with the natural surroundings and to complement the structure and work area around it. Shaping shall be in such a way as to drain or divert all overland and roof runoff safely away from the structure and surrounding work area. All disturbed areas around the structure, including spoil areas, shall be vegetated and/or surfaced with gravel, chert, or some other acceptable covering as permitted by the NRCS approving authority. Spoil areas not used for farm traffic shall be vegetated. Permanent vegetation shall be established to the plant species and by methods prescribed by the approving official. All vegetating of disturbed areas shall be done as critical area planting and shall include liming, fertilizing, seedbed preparation, seeding and mulching. Temporary vegetation may be used when conditions or seeding dates are not suitable for the establishment of permanent vegetation. Disturbed areas shall be mulched regardless of seeding dates. If farm animals will have access to the vegetated area, it shall be appropriately fenced until vegetation is well established.

11.16. ADDENDUM

Wood and Timber (Section 12.6.1): The minimum net retention of the common preservative, ACQ, alkaline copper quat, shall be 0.4 lbs/cf (pcf) for dimension lumber used above ground and 0.6 pcf for structural posts or timbers in contact with the ground. Lumber used for walls of composting bins and dry stack storage areas may be treated to a 0.25 pcf level.

Fasteners (Section 12.6.3): Due to the corrosiveness of the ACQ the fasteners or connections shall be Type 304 or 316 stainless steel or hot-dip galvanized fasteners meeting ASTM A153 with 2 ounces of zinc coating per square foot minimum and connectors to meet ASTM A653, Class G185 sheet with 1.85 ounces of zinc coating per square foot minimum.



2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440

LAND APPLICATION ANALYSIS

Client : Henry Farmers Co-op Rodney Gallimore 1211 W. Wood

Billy Sutton

Grower:

PO:

Report No: Cust No: 09-219-0254

Date Printed:

01179 08/13/2009

Page:

1 of 1

Date Recd :

8/7/2009

Paris , TN 38242-1056

Lab Number: 75469

Sample Id: Manure

	- Analysis	Pounds Per 1000 Gallons
Test	As Received Dry B	
Nitrogen, N %	0.380	32.3
Phosphorus, P %	0.05	9.77 P ₂ O ₅
Potassium, K %	0.13	13.3 K ₂ O
Sulfur, S		
Magnesium, Mg		
Calcium, Ca		
Sodium, Na		
Iron, Fe		
Aluminum, Al		
Manganese, Mn		
Copper, Cu		
Zinc, Zn		
Boron, B		

Test	Result	Additional Information	Result
Moisture %	97.9	Туре	As Rec
Solid %	2.1		

Comments:

RMMA Recommended Methods of Manure Analysis, Peters et al, 2002, In Press SW USEPA, SW-846, Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, 3rd Ed. Current Revision

M. Scott McKee, Technical Director



2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440



SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower:
GARLIN ELLIS

Report No: Cust No: 09-117-0594 01179

Date Printed: Date Received : 04/28/2009 04/27/2009

PO:

Page:

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Lab Number: 04385

Field Id:

Sample Id: 24-1

Test	Results	Very Lo	West	SOI Low®	L TEST RATI	NGS Optimum	-Very High	Calculate Exchange	
Soil pH	5.7							9.	2
Buffer pH	7.67								
Phosphorus (P)	90 LB/ACRE							meq/	_
Potassium (K)	268 LB/ACRE							Calculate Satur	
Calcium (Ca)	2120 LB/ACRE		,						
Magnesium (Mg)	208 LB/ACRE			***************************************				%K	3.7
Sulfur (S)	18 LB/ACRE							%Ca	57.6
Boron (B)	0.6 LB/ACRE							%Mg	9.4
Copper (Cu)	1.8 LB/ACRE							%Н	28.7
Iron (Fe)	290 LB/ACRE	7.1						%Na	0.9
Manganese (Mn)	262 LB/ACRE								
Zinc (Zn)	2.8 LB/ACRE							K:Ma	Ratio
Sodium (Na)	38 LB/ACRE					1		0.4	
Soluble Salts								"-	
Organic Matter	1.2 % ENR 68								
Nitrate Nitrogen									

SOIL FERTILITY GUIDELINES

Crop: CORN-NO TILL

Yield Goal: 150

150 BU

Rec Units:

LB/ACRE

(lbs) []	VIE (tons)	N	P ₂ O ₅	K₃o	Mg	S	В	Cu	Mn	Zn	Fe
2500	1.25	183	53	72	0	11	1.4	0	0	3.1	
Crop : SOYBE	rop : SOYBEANS-NO TILL Yield Goal : 50								nits:		LB/ACRE

Comments :

CORN-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- · Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- · For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.

SOYBEANS-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- · Nitrogen is optional on soybeans.
- For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.



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SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower: **GARLIN ELLIS** Report No: Cust No:

09-117-0594 01179

Date Printed: Date Received: 04/28/2009 04/27/2009

PO:

Page:

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Lab Number: 04386

Field Id:

Sample Id: 24-2

			SOIL	TEST RATIN	NGS		Calculate	
Test	Results	Very Low -	Low Low	Medium	Optimum	Very High N	Exchange	Capacity
Soil pH	5.7						8.4	5
Buffer pH	7.66						meq/1	
Phosphorus (P)	126 LB/ACRE							
Potassium (K)	242 LB/ACRE						Calculate Satura	
Calcium (Ca)	1876 LB/ACRE							
Magnesium (Mg)	174 LB/ACRE						%K	3.7
Sulfur (S)	22 LB/ACRE						%Ca	55.2
Boron (B)	1.0 LB/ACRE						%Mg	8.5
Copper (Cu)	2.0 LB/ACRE						%Н	32.0
Iron (Fe)	298 LB/ACRE						%Na	0.9
Manganese (Mn)	364 LB/ACRE		-	7.12				
Zinc (Zn)	2.8 LB/ACRE						K:Mg	Ratio
Sodium (Na)	36 LB/ACRE						0.43	
Soluble Salts								-
Organic Matter	1.5 % ENR 74							
Nitrate Nitrogen								

SOIL FERTILITY GUIDELINES

Yield Goal: 150 BU **Rec Units:** LB/ACRE Crop: CORN-NO TILL

(lbs)	ME (tons)	N	P ₂ O ₅	K ₂0	Mg	S	В	Cu	Mn	Zn	Fe
2500	1.25	183	30	81	0	10	1.0	0	0	3.1	
Cuan - COVET	ANO NO TILI			Viole	Goal: 50	BU		Rec U	nite:		LB/ACRE
Crop : SOYBE	ANS-NO TILL			rieit	Goal: 50	ьо		Nec o	11115.		LBIACKE

Comments:

CORN-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- · Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- · For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.

SOYBEANS-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- · Nitrogen is optional on soybeans.
- For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.

AUG 1 9 2009
Permit Section



2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440



SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower: GARLIN ELLIS Report No: Cust No: 09-117-0594 01179

Date Printed: Date Received : 04/28/2009 04/27/2009

PO:

Page:

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Lab Number: 04387

Field Id:

Sample ld: 25-1

Test	Results	Very Low	SOI Low	L TEST RATI	NGS Optimum	e Very High	Calculated Exchange	
Soil pH	5.5						12.	0
Buffer pH	7.53							
Phosphorus (P)	80 LB/ACRE						meq/1	
Potassium (K)	278 LB/ACRE						Calculated Satura	
Calcium (Ca)	2674 LB/ACRE							
Magnesium (Mg)	252 LB/ACRE						%K	3.0
Sulfur (S)	22 LB/ACRE						%Ca	55.7
Boron (B)	0.6 LB/ACRE			Τ			%Mg	8.8
Copper (Cu)	2.4 LB/ACRE						%Н	31.3
Iron (Fe)	326 LB/ACRE				1-1-1		%Na	0.8
Manganese (Mn)	248 LB/ACRE							
Zinc (Zn)	3.2 LB/ACRE						K:Mg	Ratio
Sodium (Na)	46 LB/ACRE			T			0.34	en e
Soluble Salts							0.0	W1500
Organic Matter	1.8 % ENR 80							
Nitrate Nitrogen								
			1					

SOIL FERTILITY GUIDELINES

Crop: CORN-NO TILL Yield Goal: 150 BU Rec Units: LB/ACRE

(lbs) LI	VIE (tons)	N	P ₂ O ₅	K ₂0	Mg	S	В	Cu	Mn	Zn	Fe
3500	1.75	183	59	85	0	10	1.4	0	0	2.9	
Crop : SOYBE	ANS-NO TILL			Yield	I Goal : 50	BU		Rec U	nits:		LB/ACRE

Comments:

CORN-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.

SOYBEANS-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- · Nitrogen is optional on soybeans.
- For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.



2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440



SOIL ANALYSIS

09-117-0594 Report No: Client: Grower: Henry Farmers Co-op 01179 **GARLIN ELLIS** Cust No: 04/28/2009 Date Printed: Rodney Gallimore Date Received: 04/27/2009 1211 W. Wood Paris TN 38242-1056 PO: Page: 6 of 12

Lab Number: 04390 Field ld: Sample ld: 33-1

			so	IL TEST RATI	NGS	100	Calculate	
Test	Results	Very Low	Low	Medium	Optimum	Very High &	Exchange	Capacity
Soil pH	6.8						9.:	2
Buffer pH	7.72						meq/	
Phosphorus (P)	72 LB/ACRE			7.			<u> </u>	
Potassium (K)	168 LB/ACRE						Calculate Satura	
Calcium (Ca)	2372 LB/ACRE			•				
Magnesium (Mg)	160 LB/ACRE						%K	2.3
Sulfur (S)	16 LB/ACRE	7 July 4 - 10			ļ		%Ca	64.5
Boron (B)	1.0 LB/ACRE						%Mg	7.2
Copper (Cu)	2.6 LB/ACRE						%Н	24.3
Iron (Fe)	316 LB/ACRE		200				%Na	1.3
Manganese (Mn)	782 LB/ACRE				-			
Zinc (Zn)	2.2 LB/ACRE	179					K:Mg	Ratio
Sodium (Na)	56 LB/ACRE						0,3	
Soluble Salts								- 1000
Organic Matter	1.5 % ENR 74				1			
Nitrate Nitrogen								
			1		1			

SOIL FERTILITY GUIDELINES

Crop: CORN-NO TILL Yield Goal: 150 BU Rec Units: LB/ACRE

(lbs) []	VIE (tons)	N	P _z O ₅	K ₂0	Mg	S	В	Cu	Mn	Zn	Fe
0	0	183	63	109	0	12	1.0	0	0	3.4	
Crop : SOYBE	ANS-NO TILL		Yield Goal : 50 BU Rec Units:						nits:		LB/ACRE
-											

Comments:

CORN-NO TILL

- · Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- · For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.

SOYBEANS-NO TILL

- · Nitrogen is optional on soybeans.
- For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.



2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440



SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower:
GARLIN ELLIS

Report No: Cust No: 09-117-0594 01179

Date Printed:

Date Received:

04/28/2009 04/27/2009

PO:

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Lab Number: 04391

Field Id:

Sample Id: 34-1

	_		SOIL	TEST RATI	NGS		Calculate	
Test	Results	Very Low	Low	Medium	Optimum	Very High	Exchange	Capacity
Soil pH	5.1						6.	6
Buffer pH	7.55						meq/	100a
Phosphorus (P)	156 LB/ACRE				W. 1			
Potassium (K)	240 LB/ACRE						Calculate Satur	
Calcium (Ca)	870 LB/ACRE							
Magnesium (Mg)	112 LB/ACRE		10.3				%K	4.7
Sulfur (S)	24 LB/ACRE						%Ca	33.0
Boron (B)	1.2 LB/ACRE				J		%Mg	7.1
Copper (Cu)	1.8 LB/ACRE						%Н	54.5
Iron (Fe)	314 LB/ACRE		are the				%Na	1.4
Manganese (Mn)	392 LB/ACRE		70 TO 10 TO	CAT ST				
Zinc (Zn)	2.2 LB/ACRE						K: Mg	Ratio
Sodium (Na)	42 LB/ACRE						0.6	6
Soluble Salts						1		
Organic Matter	1.2 % ENR 68							
Nitrate Nitrogen							İ	
		İ]		

SOIL FERTILITY GUIDELINES

Crop: CORN-NO TILL

Yield Goal: 150

ΒU

Rec Units:

LB/ACRE

(lbs) LI	ME (tons)	N	P205	K ₂0	Mg	S	В	Cu	Mn	Zn	Fe
4000	2	183	30	82	13	10	0.8	0	0	3.4	
000/05	rop: SOYBEANS-NO TILL Yield Goal: 50							Rec U	nite ·		LB/ACRE
Crop : SOYBE	ANS-NO TILL			rieiu	Goal: 50	BU		IVEC O	mo.		LD// (OT L

Comments :

CORN-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- · For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.

SOYBEANS-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- · Nitrogen is optional on soybeans.
- For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.



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SOIL ANALYSIS

Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056

Grower: **GARLIN ELLIS** Report No: Cust No:

09-117-0594 01179

Date Printed: Date Received: 04/28/2009 04/27/2009

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Lab Number: 04392

Field Id:

Sample Id: 34-2

Test	Results	Very Low	SOI Low	L TEST RATI	NGS Optimum	: Very High Vil	Calculated Exchange (
Soil pH	5.2	6613 5000	LOW	MEGIGIII	Opaman :		6.4	
Buffer pH	7.51							
Phosphorus (P)	86 LB/ACRE			100			meq/1	
Potassium (K)	176 LB/ACRE						Calculated Satura	
Calcium (Ca)	718 LB/ACRE							
Magnesium (Mg)	94 LB/ACRE	0.000					%K	3,5
Sulfur (S)	20 LB/ACRE						%Ca	28.0
Boron (B)	0.6 LB/ACRE						%Mg	6.1
Copper (Cu)	1.6 LB/ACRE						%Н	61.3
Iron (Fe)	270 LB/ACRE						%Na	1.2
Manganese (Mn)	386 LB/ACRE							
Zinc (Zn)	2.4 LB/ACRE	(5) P					K:Mg	Ratio
Sodium (Na)	34 LB/ACRE						0.58	
Soluble Salts								200000
Organic Matter	1.1 % ENR 66							
Nitrate Nitrogen								
			1		_			

SOIL FERTILITY GUIDELINES

Crop: CORN-NO TILL

Yield Goal: 150

BU

Rec Units:

LB/ACRE

(lbs) LIN	√E (tons)	N	P, O ₅	K.₂0	Mg	Ø	В	Cu	Mn	Zn	Fe
4000	2	183	56	106	16	11	1.4	1.0	0	3.3	
Crop: SOYBEANS-NO TILL				Yield Goal : 50 BU			Rec Units:			LB/ACRE	

Comments:

CORN-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- · For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf

SOYBEANS-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- · Nitrogen is optional on soybeans.
- For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.



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SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower: GARLIN ELLIS Report No: Cust No: 09-117-0594 01179

Date Printed: Date Received : 04/28/2009 04/27/2009

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Lab Number: 04393

Field Id:

Sample Id: 36-1

Test	Results	Very Low		IL TEST RATI	NGS Optimum 8	Very High &	Calculated Exchange	
Soil pH	6.0			l liberton			7.0	3
Buffer pH	7.67							
Phosphorus (P)	64 LB/ACRE						meq/1	
Potassium (K)	136 LB/ACRE				T		Calculated Satura	
Calcium (Ca)	1374 LB/ACRE							
Magnesium (Mg)	158 LB/ACRE						%K	2.5
Sulfur (S)	14 LB/ACRE						%Ca	49.1
Boron (B)	1.0 LB/ACRE						%Mg	9.4
Copper (Cu)	1.4 LB/ACRE						%Н	37.7
Iron (Fe)	280 LB/ACRE		44.0				%Na	1.1
Manganese (Mn)	182 LB/ACRE	2 1 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2						
Zinc (Zn)	1.0 LB/ACRE						K:Mg	Ratio
Sodium (Na)	34 LB/ACRE						0.26	
Soluble Salts								
Organic Matter	1.6 % ENR 76			ļ				
Nitrate Nitrogen								

SOIL FERTILITY GUIDELINES

Crop: SOYBEANS-NO TILL

Yield Goal: 50

BU

Rec Units:

LB/ACRE

(lbs) Li	ME (tons)	N	P ₂ O ₅	K₂O	Mg	S	В	Cu	Mn	Zn	Fe
2000	1	0	30	102	0	18	0.5	1.0	0	3.0	
Crop : CORN-	NO TILL			Yield	Goal : 150	BU		Rec U	nits:		LB/ACRE
2000	1	183	67	121	0	13	1.0	1.0	0	4.0	

Comments:

SOYBEANS-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

· Nitrogen is optional on soybeans.

· For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.

CORN-NO TILL

- Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- · For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.



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SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower: **GARLIN ELLIS** Report No: Cust No:

09-117-0594 01179

Date Printed:

04/28/2009 04/27/2009

PO:

Date Received:

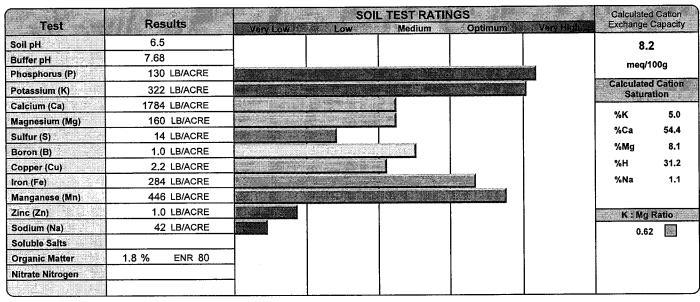
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Lab Number: 04394

Field Id:

Sample Id: 36-2



SOIL FERTILITY GUIDELINES

Crop: SOYBEANS-NO TILL

Yield Goal: 50

BU

Rec Units:

LB/ACRE

(lbs) LI	ME (tons)	N	P _z O ₅	K ₂0	Mg	S	В	Cu	Mn	Zn	Fe
0	0	0	30	40	0	18	0.5	0	0	3.0	
0 0 0 30 40 0 Crop: CORN-NO TILL Yield Goal:											
Crop : CORN-	NO TILL			Yield	I Goal : 150	BU		Rec U	nits:		LB/ACRE

Comments:

SOYBEANS-NO TILL

- · Nitrogen is optional on soybeans.
- · For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.

CORN-NO TILL

- Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.



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SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower: **GARLIN ELLIS** Report No: Cust No:

09-117-0594 01179

Date Printed: Date Received: 04/28/2009 04/27/2009

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Lab Number: 04395

Field Id:

Sample Id: 37-1

Test	Results			L TEST RATIN	NGS Optimum	Very High:	Calculated Exchange	
Soil pH	5.0	Very Low	Low	Medium	Opanium		9.5	
Buffer pH	7.46	-						
Phosphorus (P)	108 LB/ACRE						meq/1	
Potassium (K)	308 LB/ACRE						Calculated Sature	
Calcium (Ca)	1452 LB/ACRE							
Magnesium (Mg)	244 LB/ACRE						%K	4.2
Sulfur (S)	20 LB/ACRE		35.0		ŀ		%Ca	38.2
Boron (B)	1,2 LB/ACRE						%Mg	10.7
Copper (Cu)	1.8 LB/ACRE						%H	45.5
Iron (Fe)	296 LB/ACRE			1000			%Na	1.0
Manganese (Mn)	292 LB/ACRE							
Zinc (Zn)	3.2 LB/ACRE						K:Mg	Ratio
Sodium (Na)	42 LB/ACRE						0.39	, [
Soluble Salts				1				- appendid
Organic Matter	1.7 % ENR 78		İ					
Nitrate Nitrogen								

SOIL FERTILITY GUIDELINES

Crop: SOYBEANS-NO TILL

Yield Goal: 50

BU

Rec Units:

LB/ACRE

(fbs)	IME (tons)	N	P2 O5	K 20	Mg	S	В	Cu	Mn	Zn	Fe
5000	2.5	0	30	40	0	15	0	0	0	0	
Crop : CORN-	NO TILL			Yield	Goal : 150	BU		Rec U	nits:		LB/ACRE
Olop i doi											

Comments:

SOYBEANS-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

Nitrogen is optional on soybeans.

For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.

CORN-NO TILL

- Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.



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SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower:
GARLIN ELLIS

Report No: Cust No: 09-117-0594 01179

Date Printed: Date Received : 04/28/2009 04/27/2009

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Lab Number: 04396

Field Id:

Sample Id: 26-1

			SOI	L TEST RATIN	IGS		Calculate	
Test	Results	Very Low	Low	Medium	Optimum	Very High "	Exchange	Capacity
Soil pH	5.3						12	.7
Buffer pH	7.45						meq/	Inna
Phosphorus (P)	100 LB/ACRE		100					
Potassium (K)	308 LB/ACRE						Calculate Satur	
Calcium (Ca)	2550 LB/ACRE							
Magnesium (Mg)	348 LB/ACRE						%K	3,1
Sulfur (S)	22 LB/ACRE	(1)					%Ca	50.2
Boron (B)	0.8 LB/ACRE						%Mg	11.4
Copper (Cu)	2.0 LB/ACRE						%Н	34.6
Iron (Fe)	310 LB/ACRE						%Na	0.8
Manganese (Mn)	204 LB/ACRE							
Zinc (Zn)	3.4 LB/ACRE						K:Mg	Ratio
Sodium (Na)	46 LB/ACRE						0.2	7 🗍
Soluble Salts								
Organic Matter	2.2 % ENR 88							
Nitrate Nitrogen								

SOIL FERTILITY GUIDELINES

Crop: CORN-NO TILL

Yield Goal: 150

BU

Rec Units:

LB/ACRE

(lbs) Ll	ME (tons)	N	P ₂ O ₅	K 20	Mg	S	В	Cu	Mn	Zn	Fe
4500	2.25	183	43	71	0	10	1.2	0	0	2.8	
Crop : SOYBE	ANS-NO TILL			Yield	Goal : 50	BU		Rec U	nits:		LB/ACRE

Comments:

CORN-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- · Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- · For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.

SOYBEANS-NO TILL

- · Nitrogen is optional on soybeans.
- · For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.



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SOIL ANALYSIS

Client: Grower: Report No: 09-117-0594 Henry Farmers Co-op **GARLIN ELLIS** Cust No: 01179 Date Printed: Rodney Gallimore 04/28/2009 1211 W. Wood Date Received: 04/27/2009 Paris TN 38242-1056 PO: 4 of 12 Page:

Lab Number: 04388 Field Id: Sample Id: 27-1

	5		SOII	TEST RATIN	1GS	100	Calculated	
Test	Results	Very Low	Low	Medium	Optimum	Very High #	Exchange	Capacity
Soil pH	5.9						11.	0
Buffer pH	7.60						ŀ	
Phosphorus (P)	36 LB/ACRE						meq/1	
Potassium (K)	310 LB/ACRE						Calculated Satura	
Calcium (Ca)	2338 LB/ACRE			·	_		Jaiure	
Magnesium (Mg)	358 LB/ACRE						%K	3.6
Sulfur (S)	18 LB/ACRE						%Ca	53.1
Boron (B)	0,6 LB/ACRE	1	100				%Mg	13.6
Copper (Cu)	2.0 LB/ACRE						%Н	29.1
Iron (Fe)	232 LB/ACRE		or evan	gentle e			%Na	0.8
Manganese (Mn)	272 LB/ACRE							
Zinc (Zn)	1.8 LB/ACRE						K:Mg	Ratio
Sodium (Na)	42 LB/ACRE	7009010000		!			0.27	
Soluble Salts				:			J	
Organic Matter	2.3 % ENR 90					1		
Nitrate Nitrogen								
7.55 (Fig. 1)								

SOIL FERTILITY GUIDELINES

Crop: COF	RN-NO TILL		Yield Goal: 150 BU Rec Units:					LB/ACRE			
(lbs)	LIME (tons)	N	P205	K 20	Mg	S	В	Cu	Mn	Zn	Fe
2500	1.25	183	88	70	0	11	1.4	0	0	3.6	
Crop: SOY	BEANS-NO TILL			Yield	Goal : 50	BU	,	Rec U	nits:		LB/ACRE
2500	1.25	0	72	77	0	16	1.0	0	0	2.2	

Comments:

CORN-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- · Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- · For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.

SOYBEANS-NO TILL

- · Nitrogen is optional on soybeans.
- · For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.



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SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056

Grower: GARLIN ELLIS

Report No: Cust No: 09-117**-**0594 01179

Date Printed: Date Received : 04/28/2009 04/27/2009

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Lab Number: 04389

Field Id:

Sample Id: 29-1

Test	Results	SOIL TEST RA		Calculated Cation Exchange Capacity
Soil pH	5.3	Very/Low Medium	Openium Series y Argum	8.2
Buffer pH	7.60			
Phosphorus (P)	30 LB/ACRE			meq/100g
Potassium (K)	268 LB/ACRE	Consignation (Constitution)		Calculated Cation Saturation
Calcium (Ca)	1380 LB/ACRE	A SECOND SECOND		
Magnesium (Mg)	260 LB/ACRE			%K 4.2
Sulfur (S)	20 LB/ACRE	50 But \$20 \$4.50		%Ca 42.1
Boron (B)	0.8 LB/ACRE			%Mg 13.2
Copper (Cu)	1.6 LB/ACRE	Maria		%H 39.0
Iron (Fe)	208 LB/ACRE			%Na 1.2
Manganese (Mn)	178 LB/ACRE			
Zinc (Zn)	1.8 LB/ACRE	10.00		K : Mg Ratio
Sodium (Na)	44 LB/ACRE			0.32
Soluble Salts				0.02
Organic Matter	2.0 % ENR 84			
Nitrate Nitrogen				

SOIL FERTILITY GUIDELINES

Crop: CORN-NO TILL

Yield Goal: 150

BU

Rec Units:

LB/ACRE

(lbs) []	ME (tons)	N	P _z O ₅	K₂O	Mg	S	В	Cu	Mn	Zn	Fe
3500	1.75	183	94	72	0	11	1.2	1.0	0	3.6	
Crop : SOYBE	ANS-NO TILL			Yield	l Goal : 50	BU		Rec U	nits:		LB/ACRE

Comments :

CORN-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.

SOYBEANS-NO TILL

- · Nitrogen is optional on soybeans.
- For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.



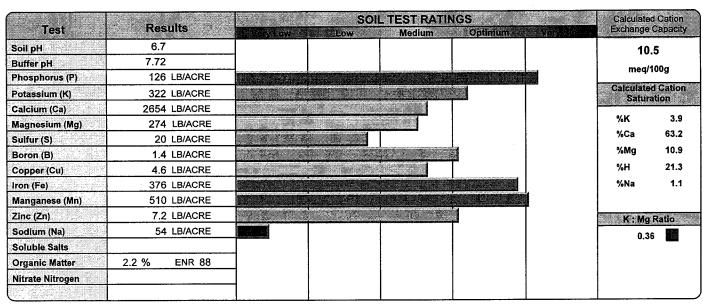
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SOIL ANALYSIS

Report No: 09-113-0577 Client: Grower: 01179 Henry Farmers Co-op **GARLIN ELLIS** Cust No: Date Printed: 04/24/2009 Rodney Gallimore Date Received: 04/23/2009 1211 W. Wood Paris TN 38242-1056 PO: Page: 1 of 24

Lab Number: 03015 Field ld: Sample ld: 1-1



SOIL FERTILITY GUIDELINES

Crop: BERM	rop : BERMUDA/LEGUME PASTURE			Yield	TONS		Rec Units:		LB/ACRE		
(ibs) L	IME (tons)	N	P ₂ O ₅	K ₂0	Mg	S	В	Cu	Mn	Zn	Fe
0	0	40-60	30	39	0	15	0.6	0	0	0	
Crop:								Rec U	nits:		

Comments :

- · If the grass-legume stand contains less than 25 percent legume, topdress with N rates used for a straight grass stand.
- · For renovation of a grass stand with a legume, lime the soil to raise the soil pH to 6.4.
- In renovation do not apply nitrogen or the grass will reduce that stand of the legume.
- · For renovation, apply inoculant to the legume seed and molybdenum seed treatment or a molybdenum soil application.
- An application of 40-80 lbs of nitrogen per acre may be made in late spring when clover growth has slowed.
- · All of the recommended rates of P and K should be applied in the fall when clover growth begins.



2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440



SOIL ANALYSIS

Client:
Henry Farmers Co-op
Rodney Gallimore
1211 W. Wood
Paris TN 38242-1056

Grower:
GARLIN ELLIS

Report No: Cust No: 09-113-0577 01179

Date Printed: Date Received : 04/24/2009 04/23/2009

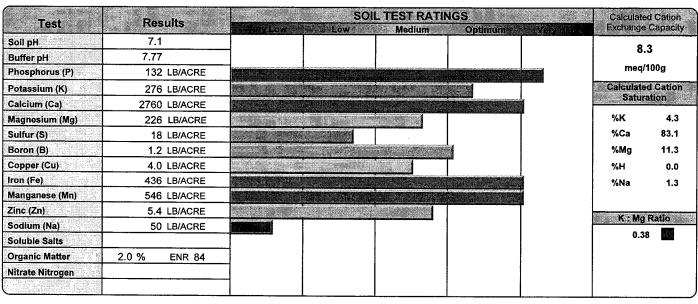
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Lab Number: 03016

Field Id:

Sample Id: 2-1



SOIL FERTILITY GUIDELINES

Yield Goal: 3

TONS

Rec Units:

LB/ACRE

(lbs)	IME (tons)	N	P ₂ O ₅	K₂0	Mg	5	В	Cu	Mn	Zn	Fe
0	0	40-60	30	30	0	16	0.8	0	0	0	
Crop:								Rec U	nits:		
l											

Comments:

- If the grass-legume stand contains less than 25 percent legume, topdress with N rates used for a straight grass stand.
- · For renovation of a grass stand with a legume, lime the soil to raise the soil pH to 6.4.
- · In renovation do not apply nitrogen or the grass will reduce that stand of the legume.
- For renovation, apply inoculant to the legume seed and molybdenum seed treatment or a molybdenum soil application.
- An application of 40-80 lbs of nitrogen per acre may be made in late spring when clover growth has slowed.
- All of the recommended rates of P and K should be applied in the fall when clover growth begins.



2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440



SOIL ANALYSIS

Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056

Grower: **GARLIN ELLIS** Report No: Cust No:

09-113-0577 01179

Date Printed: Date Received: 04/24/2009

PO:

04/23/2009

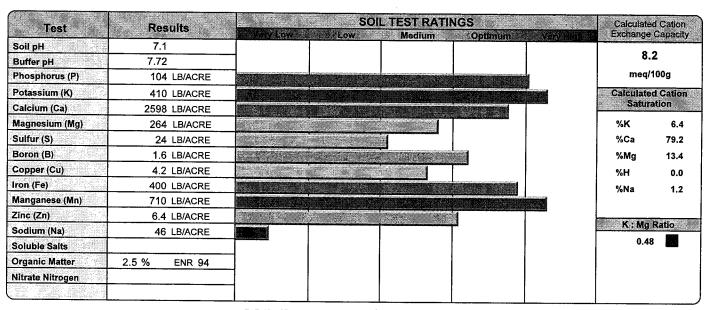
Page:

3 of 24

Lab Number: 03018

Field Id:

Sample Id: 3-1



SOIL FERTILITY GUIDELINES

Crop:	BERMU	DA/LEGUME	PASTURE
-------	-------	-----------	----------------

Yie	ld	Go	al	:	3
-----	----	----	----	---	---

TONS

Rec Units:

LB/ACRE

(lbs	LIM	E (tons)	N	P ₂ O ₅	K ₂O	Mg	S	В	Cu	Mn	Zn	Fe
0		0	40-60	30	30	0	14	0.6	0	0	0	
Crop:									Rec U	nits:		L

Comments:

- · If the grass-legume stand contains less than 25 percent legume, topdress with N rates used for a straight grass stand.
- · For renovation of a grass stand with a legume, lime the soil to raise the soil pH to 6.4.
- In renovation do not apply nitrogen or the grass will reduce that stand of the legume.
- For renovation, apply inoculant to the legume seed and molybdenum seed treatment or a molybdenum soil application.
- An application of 40-80 lbs of nitrogen per acre may be made in late spring when clover growth has slowed.
- · All of the recommended rates of P and K should be applied in the fall when clover growth begins.



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SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056

Grower: **GARLIN ELLIS**

Report No: Cust No:

09-113-0577 01179

Date Printed: Date Received: 04/24/2009 04/23/2009

PO:

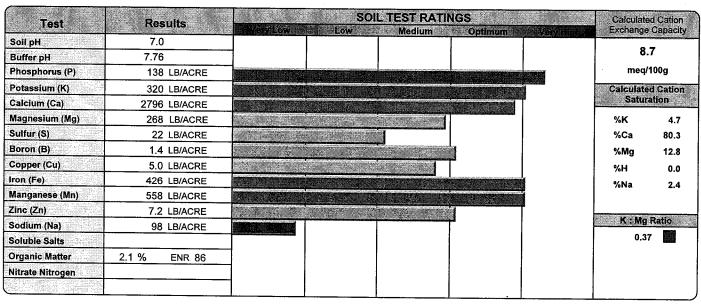
Page:

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Lab Number: 03019

Field Id:

Sample Id: 3-2



SOIL FERTILITY GUIDELINES

Crop : BERM	UDA/LEGUME F	PASTURE		Yield	l Goal : 3	TONS	;	Rec U	nits:		LB/ACRE
(lbs) L	ME (tons)	N	P ₂ O ₅	K.₂O	Mg	s	В	Cu	Mn	Zn	Fe
0	0	40-60	30	30	0	14	0.6	0	0	0	
Crop:							-	Rec U	nits:	!	J
	-										

Comments

- · If the grass-legume stand contains less than 25 percent legume, topdress with N rates used for a straight grass stand.
- · For renovation of a grass stand with a legume, lime the soil to raise the soil pH to 6.4.
- In renovation do not apply nitrogen or the grass will reduce that stand of the legume.
- For renovation, apply inoculant to the legume seed and molybdenum seed treatment or a molybdenum soil application.
- An application of 40-80 lbs of nitrogen per acre may be made in late spring when clover growth has slowed.
- · All of the recommended rates of P and K should be applied in the fall when clover growth begins.



2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440



SOIL ANALYSIS

Report No: Client: Grower: 09-113-0577 Henry Farmers Co-op **GARLIN ELLIS** Cust No: 01179 Rodney Gallimore Date Printed: 04/24/2009 1211 W. Wood Date Received: 04/23/2009 Paris TN 38242-1056 PO: Page: 5 of 24

Lab Number: 03020 Field Id: Sample Id: 4-1

	B - 4		so so	IL TEST RATI	NGS		ited Cation
Test	Results	Citiesy Low	Łow	Medium	Optimum	Very House Exchange	ge Capacity
Soil pH	6.7						7.8
Buffer pH	7.73					1	
Phosphorus (P)	34 LB/ACRE					me	q/100g
Potassium (K)	152 LB/ACRE						ited Cation uration
Calcium (Ga)	1872 LB/ACRE					Jan	uration
Magnesium (Mg)	154 LB/ACRE					%K	2.5
Sulfur (S)	18 LB/ACRE					%Ca	60.0
Boron (B)	1.2 LB/ACRE					%Mg	8.2
Copper (Cu)	2.4 LB/ACRE		9		T	%Н	27.7
Iron (Fe)	262 LB/ACRE					%Na	1.3
Manganese (Mn)	528 LB/ACRE						
Zinc (Zn)	2.8 LB/ACRE					K + N	lg Ratio
Sodium (Na)	48 LB/ACRE						.30
Soluble Salts						"	.30
Organic Matter	1.8 % ENR 80						
Nitrate Nitrogen		_]					

SOIL FERTILITY GUIDELINES

Crop: CORN-NO TILL	Yield Goal: 150	BU	Rec Units:	LB/ACRE
--------------------	-----------------	----	------------	---------

(lbs) LI	IME (tons)	N	P, O ₅	K ₂0	Mg	S	В	Cu	Mn	Zn	Fe
0	0	183	90	115	0	11	0.8	0	0	3.1	
					-						
Crop : SOYBE	ANS-NO TILL			Yield	Goal : 50	BU		Rec U	nits:		LB/ACRE

Comments:

CORN-NO TILL

- · Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- · For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.

SOYBEANS-NO TILL

- · Nitrogen is optional on soybeans.
- · For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.

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SOIL ANALYSIS

Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower: **GARLIN ELLIS** Report No: Cust No:

09-113-0577 01179

Date Printed: Date Received: 04/24/2009 04/23/2009

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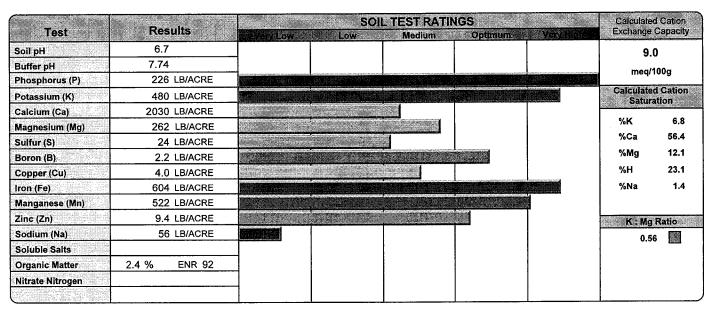
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Lab Number: 03021

Field Id:

Sample Id: 5-1



SOIL FERTILITY GUIDELINES

Crop : BERMI	JDA/LEGUME	PASTURE
--------------	------------	---------

Yield Goal: 3

TONS

Rec Units:

LB/ACRE

(lbs)	IME (tons)	N	P ₂ O ₅	K ₂0	Mg	S	В	Cu	Mn	Zn	Fe
0	0	40-60	30	30	0	14	0	0	0	0	
_									••		
Crop:								Rec U	nits:		

Comments:

- · If the grass-legume stand contains less than 25 percent legume, topdress with N rates used for a straight grass stand.
- · For renovation of a grass stand with a legume, lime the soil to raise the soil pH to 6.4.
- In renovation do not apply nitrogen or the grass will reduce that stand of the legume.
- For renovation, apply inoculant to the legume seed and molybdenum seed treatment or a molybdenum soil application.
- An application of 40-80 lbs of nitrogen per acre may be made in late spring when clover growth has slowed.
- · All of the recommended rates of P and K should be applied in the fall when clover growth begins.



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SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower:
GARLIN ELLIS

Report No: Cust No: 09-113-0577 01179

Date Printed:
Date Received:

04/24/2009 04/23/2009

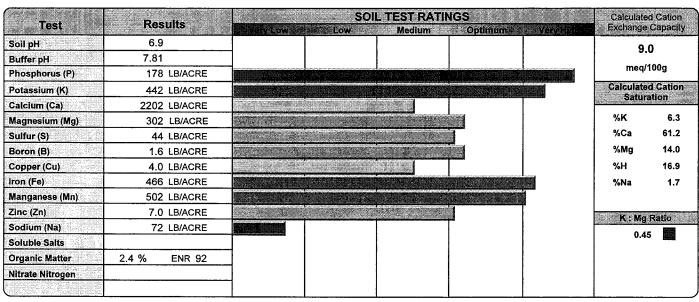
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Page :

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Lab Number: 03022 Field Id: Sample Id: 6-1



SOIL FERTILITY GUIDELINES

 Crop : CORN-NO TILL
 Yield Goal : 150
 BU
 Rec Units:
 LB/ACRE

 (lbs) LIME (tons)
 N
 P2 05
 K20
 Mg
 S
 B
 Cu
 Mn
 Zn
 Fe

(lbs) [ME (tons)	N	P ₂ O ₅	K₂0	Mg	S	В	Cu	Mn	Zn	Fe
0	0	183	30	40	0	0	0.6	0	0	0	
0	AND NO THE			Viala		DII		D II.	!4		D/4 0DE
Crop : SOYBE	ANS-NO TILL			1 leid	Goal : 50	BU		Rec U	nits:		_B/ACRE

Comments :

CORN-NO TILL

- · Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- · For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.

SOYBEANS-NO TILL

- · Nitrogen is optional on soybeans.
- For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.

SOIL ANALYSIS

Report No: 09-113-0577 Client: Grower: 01179 Henry Farmers Co-op **GARLIN ELLIS** Cust No: Date Printed: 04/24/2009 Rodney Gallimore Date Received: 04/23/2009 1211 W. Wood Paris TN 38242-1056 PO: Page: 8 of 24

Lab Number: 03023 Field Id: Sample Id: 6-2

			SOII	TEST RATIN	IGS		Calculate	
Test	Results	Weiy Low	Low	Medium	Optimum	Very Highligh	Exchange	Capacity
Soil pH	6.7					1	10	.9
Buffer pH	7.72						meq/	100a
Phosphorus (P)	62 LB/ACRE							
Potassium (K)	316 LB/ACRE			100			Calculate Satur	
Calcium (Ca)	2626 LB/ACRE					1		
Magnesium (Mg)	374 LB/ACRE						%K	3.7
Sulfur (S)	26 LB/ACRE		446				%Ca	60.2
Boron (B)	1.4 LB/ACRE		144				%Mg	14.3
Copper (Cu)	3.8 LB/ACRE						%Н	20.6
Iron (Fe)	260 LB/ACRE			4			%Na	1.4
Manganese (Mn)	300 LB/ACRE							
Zinc (Zn)	3.0 LB/ACRE						K:Mg	Ratio
Sodium (Na)	72 LB/ACRE						0.2	6 🗍
Soluble Salts								- 1,000
Organic Matter	1.6 % ENR 76							
Nitrate Nitrogen								

SOIL FERTILITY GUIDELINES

Crop: CORN-NO TILL Yield Goal: 150 BU Rec Units: LB/ACRE

(lbs) LI	ME (tons)	N	P ₂ O ₅	. K₂0	Mg	s	В	Cu	Mn	Zn	Fe
0	0	183	68	67	0	10	0.6	0	0	3.0	
											1
Crop : SOYBE	ANS-NO TILL			Yield	l Goal : 50	BU		Rec U	nits:		LB/ACRE

Comments :

CORN-NO TILL

- Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.

SOYBEANS-NO TILL

- · Nitrogen is optional on soybeans.
- For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.



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SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower: **GARLIN ELLIS** Report No: Cust No:

09-113-0577 01179

Date Printed: Date Received: 04/24/2009 04/23/2009

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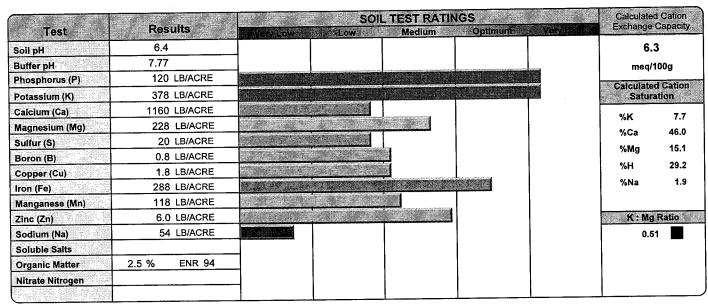
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Lab Number: 03024

Field Id:

Sample Id: 7-1



SOIL FERTILITY GUIDELINES

Crop: BERMUDA/LEGUME PASTURE

Yield Goal: 3

TONS

Rec Units:

LB/ACRE

(lbs)	IME (tons)	N	P ₂ O ₅	K 20	Mg	S	8	Cu	Mn	Zn	Fe
0	0	40-60	30	30	0	15	1.2	0	0	0	
Crop:								Rec U	nits:		
			T	T .			1	T	T		

Comments :

- If the grass-legume stand contains less than 25 percent legume, topdress with N rates used for a straight grass stand.
- For renovation of a grass stand with a legume, lime the soil to raise the soil pH to 6.4.
- In renovation do not apply nitrogen or the grass will reduce that stand of the legume.
- · For renovation, apply inoculant to the legume seed and molybdenum seed treatment or a molybdenum soil application.
- An application of 40-80 lbs of nitrogen per acre may be made in late spring when clover growth has slowed.
- All of the recommended rates of P and K should be applied in the fall when clover growth begins.



2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440



SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower: **GARLIN ELLIS** Report No: Cust No:

09-113-0577 01179

Date Printed: Date Received: 04/24/2009 04/23/2009

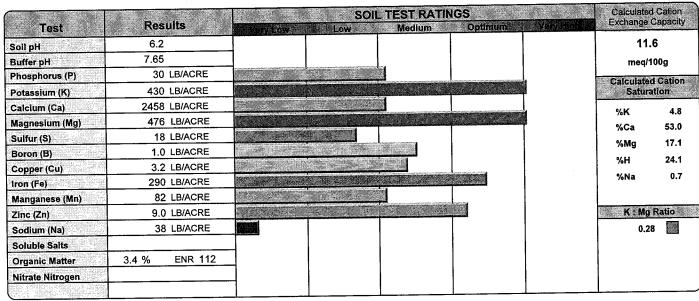
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Lab Number: 03025

Field Id:

Sample ld: 7-2



SOIL FERTILITY GUIDELINES

Crop : BERMU	Crop : BERMUDA/LEGUME PASTURE			Yield (Goal : 3	TONS		Rec U	nits:	LB/ACRE		
-	ME (tons)	N	P ₂ O ₅	K 20	Mg	S	В	Cu	Mn	Zn	Fe	
1500	0.75	40-60	58	30	0	16	1.0	0	0	0		
Crop:								Rec U	nits:			
										<u> </u>	<u> </u>	

Comments :

BERMUDA/LEGUME PASTURE

- If the grass-legume stand contains less than 25 percent legume, topdress with N rates used for a straight grass stand.
- For renovation of a grass stand with a legume, lime the soil to raise the soil pH to 6.4.
- In renovation do not apply nitrogen or the grass will reduce that stand of the legume.
- · For renovation, apply inoculant to the legume seed and molybdenum seed treatment or a molybdenum soil application.
- An application of 40-80 lbs of nitrogen per acre may be made in late spring when clover growth has slowed.
- · All of the recommended rates of P and K should be applied in the fall when clover growth begins.



2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440



SOIL ANALYSIS

Client:
Henry Farmers Co-op
Rodney Gallimore
1211 W. Wood
Paris TN 38242-1056

Grower: GARLIN ELLIS Report No: Cust No: 09-113-0577 01179

Date Printed:

04/24/2009

Date Received :

04/23/2009

PO:

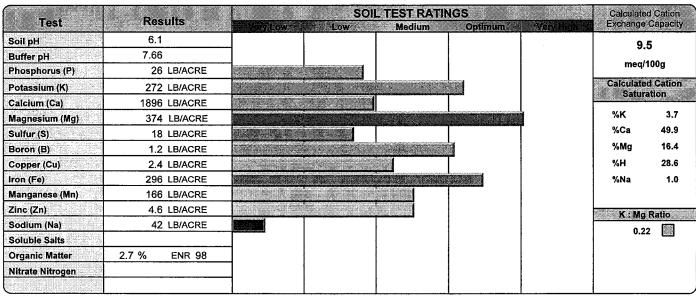
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Lab Number: 03026

Field Id:

Sample Id: 8-1



SOIL FERTILITY GUIDELINES

Crop: BERMUDA/LEGUME PASTURE

Yield Goal: 3

TONS

Rec Units:

LB/ACRE

(lbs) LIM	/IE (tons)	N	P205	K 2O	Mg	S	В	Cu	Mn	Zn	Fe
1500	0.75	40-60	63	30	0	16	0.8	0	0	0	
Crop:								Rec U	nits:		

Comments :

BERMUDA/LEGUME PASTURE

- If the grass-legume stand contains less than 25 percent legume, topdress with N rates used for a straight grass stand.
- · For renovation of a grass stand with a legume, lime the soil to raise the soil pH to 6.4.
- In renovation do not apply nitrogen or the grass will reduce that stand of the legume.
- For renovation, apply inoculant to the legume seed and molybdenum seed treatment or a molybdenum soil application.
- · An application of 40-80 lbs of nitrogen per acre may be made in late spring when clover growth has slowed.
- All of the recommended rates of P and K should be applied in the fall when clover growth begins.



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SOIL ANALYSIS

Client: Henry Farmers Co-op Rodnev Gallimore 1211 W. Wood Paris TN 38242-1056 Grower: **GARLIN ELLIS** Report No: Cust No:

09-113-0577 01179

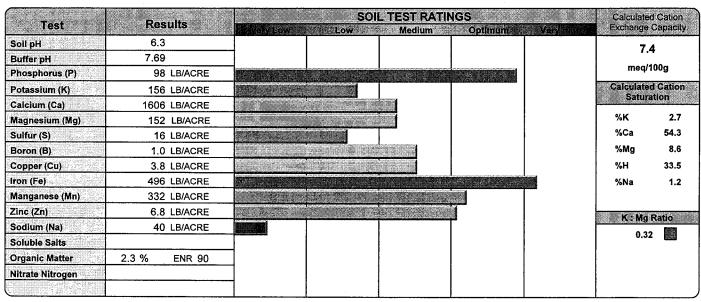
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04/24/2009 04/23/2009

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Lab Number: 03027 Field Id: Sample ld: 9-1



SOIL FERTILITY GUIDELINES

Crop: BERM	UDA/LEGUME P	PASTURE		Yield	Goal : 3	TONS		Rec U	nits:		LB/ACRE
(lbs) [IME (tons)	N	P, O 5	K ₂O	Mg	S	В	Cu	Mn	Zn	Fe
0	0	40-60	30	127	0	17	1.0	0	0	0	
Crop:								Rec U	nits:		

Comments:

BERMUDA/LEGUME PASTURE

- · If the grass-legume stand contains less than 25 percent legume, topdress with N rates used for a straight grass stand.
- For renovation of a grass stand with a legume, lime the soil to raise the soil pH to 6.4.
- In renovation do not apply nitrogen or the grass will reduce that stand of the legume.
- For renovation, apply inoculant to the legume seed and molybdenum seed treatment or a molybdenum soil application.
- · An application of 40-80 lbs of nitrogen per acre may be made in late spring when clover growth has slowed.
- All of the recommended rates of P and K should be applied in the fall when clover growth begins.

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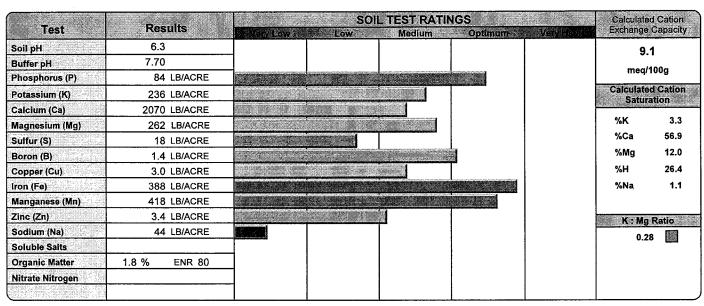
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SOIL ANALYSIS

Report No: 09-113-0577 Grower: Client: 01179 Henry Farmers Co-op **GARLIN ELLIS** Cust No: Rodney Gallimore Date Printed: 04/24/2009 1211 W. Wood Date Received : 04/23/2009 Paris TN 38242-1056 PO: Page: 13 of 24

Lab Number: 03028 Field Id: Sample Id: 10-1



SOIL FERTILITY GUIDELINES

Crop : FESCU	JE/LEGUME PAS	STURE		Yield	l Goal : 3	TONS		Rec U	nits:		LB/ACRE
(ibs) L	ME (tons)	N	P ₂ O ₅	K ₂O	Mg	S	В	Cu	Mn	Zn	Fe
0	0	40-60	30	64	0	16	0.6	0	0	0	
Crop:								Rec U	nits:		
	-										

Comments :

- · Nitrogen not needed on grass-legume mixtures with a good legume stand.
- · If the grass-legume stand contains less than 25 percent legume, topdress with N rates used for a straight grass stand.
- · Apply 1.5 to 2.0 lbs of boron/acre/year on grass-legume mixtures.



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SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056

Grower: **GARLIN ELLIS** Report No: Cust No:

09-113-0577 01179

Date Printed: Date Received: 04/24/2009

04/23/2009

PO:

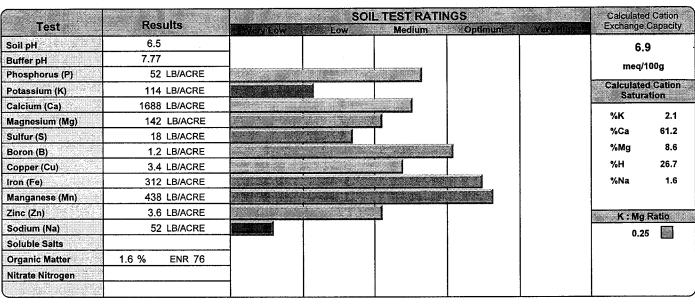
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Lab Number: 03029

Field Id:

Sample Id: 10-2



SOIL FERTILITY GUIDELINES

Crop:	FESCI	JE/LEGUME	PASTURE
-------	--------------	-----------	---------

Yield Goal: 3

TONS

Rec Units:

LB/ACRE

(lbs)	IME (tons)	N	P ₂ O ₅	K ₂0	Mg	5	В	Cu	Mn	Zn	Fe
0	0	40-60	42	136	0	16	0.8	0	0	0	
C								Rec U	nite:		
Crop:								IVEC OI	iiio.		

Comments:

- · Nitrogen not needed on grass-legume mixtures with a good legume stand.
- If the grass-legume stand contains less than 25 percent legume, topdress with N rates used for a straight grass stand.
- Apply 1.5 to 2.0 lbs of boron/acre/year on grass-legume mixtures.



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SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower: **GARLIN ELLIS** Report No: Cust No:

09-113-0577 01179

Date Printed: Date Received: 04/24/2009

04/23/2009

PO:

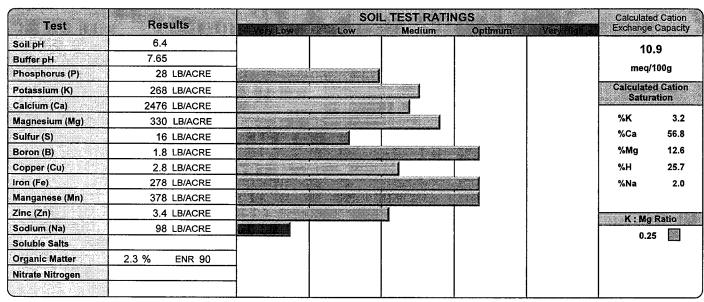
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Lab Number: 03030

Field Id:

Sample Id: 11-1



SOIL FERTILITY GUIDELINES

Crop: FESCL	JE/LEGUME PA	STURE		Yield	i Goal : 3	TONS		Rec U	nits:		LB/ACRE
(lbs) [ME (tons)	N	P, O ₅	K ₂0	Mg	S	В	Cu	Mn	Zn	Fe
0	0	40-60	60	83	0	17	0	0	0	0	
Crop:								Rec U	nits:		

Comments:

- · Nitrogen not needed on grass-legume mixtures with a good legume stand.
- If the grass-legume stand contains less than 25 percent legume, topdress with N rates used for a straight grass stand.
- Apply 1.5 to 2.0 lbs of boron/acre/year on grass-legume mixtures.



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SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower: **GARLIN ELLIS**

Report No: Cust No:

09-113-0577 01179

Date Printed:

04/24/2009

PO:

Date Received:

04/23/2009

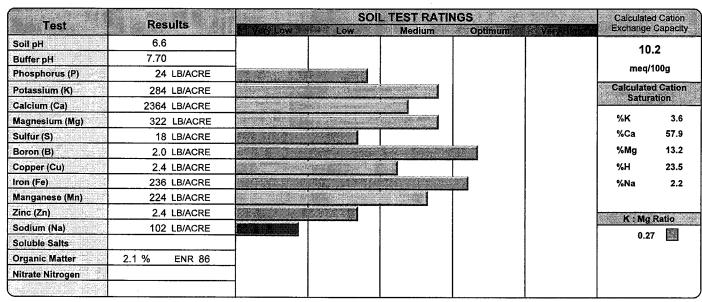
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Lab Number: 03031

Field Id:

Sample Id: 12-1



SOIL FERTILITY GUIDELINES

Crop : FESCI	op : FESCUE/LEGUME PASTURE			Yield	Goal: 3	TONS		Rec U	nits:		LB/ACRE	
(lbs) L	IME (tons)	N	P ₂ O ₅	K 20	Mg	S	В	Cu	Mn	Zn	Fe	
0	0	40-60	65	70	0	16	0	0	0	2.0	-	
Crop:								Rec U	nits:			
											T	

Comments:

- · Nitrogen not needed on grass-legume mixtures with a good legume stand.
- · If the grass-legume stand contains less than 25 percent legume, topdress with N rates used for a straight grass stand.
- · Apply 1.5 to 2.0 lbs of boron/acre/year on grass-legume mixtures.



2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440



SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower: **GARLIN ELLIS** Report No: Cust No:

09-113-0577 01179

Date Printed: Date Received: 04/24/2009 04/23/2009

PO:

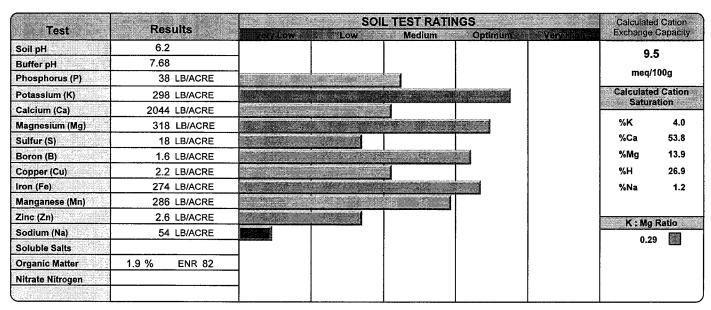
Page:

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Lab Number: 03032

Field Id:

Sample Id: 13-1



SOIL FERTILITY GUIDELINES

Crop: FESCU	E/LEGUME PA	STURE		Yield Goal: 3 TONS Rec Units:					LB/ACRE		
(lbs)	ME (tons)	N	P ₂ O ₅	K 20	Mg	s	В	Cu	Mn	Zn	Fe
1500	0.75	40-60	51	30	0	16	0.6	0	0	2.0	:
Cron		-						Dog III	nito.		

Crop:

Rec Units:

Comments:

FESCUE/LEGUME PASTURE

- · Nitrogen not needed on grass-legume mixtures with a good legume stand.
- If the grass-legume stand contains less than 25 percent legume, topdress with N rates used for a straight grass stand.
- Apply 1.5 to 2.0 lbs of boron/acre/year on grass-legume mixtures.



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SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower: **GARLIN ELLIS** Report No: Cust No:

09-113-0577 01179

Date Printed: Date Received: 04/24/2009 04/23/2009

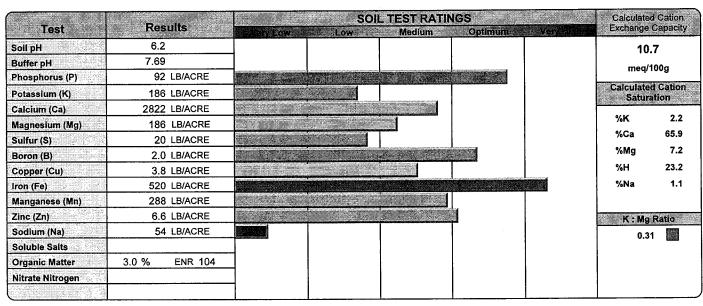
PO:

Page: 18 of 24

Lab Number: 03033

Field Id:

Sample Id: 30-1



SOIL FERTILITY GUIDELINES

LB/ACRE Crop: CORN-NO TILL Yield Goal: 150 BU **Rec Units:**

(lbs) Ll	ME (tons)	N	P ₂ O ₅	K 20	Mg	S	8	Cu	Mn	Zn	Fe
1500	0.75	183	51	121	0	11	0	0	0	0	
O COVDE	ANO NO TIL			Viold	C1 - F0	BU		Rec U	nite:		LB/ACRE
Crop : SOYBE	ANS-NO FILL			rielu	Goal : 50	ВU		Kec u	1115.		LDIACILE

Comments:

CORN-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.

SOYBEANS-NO TILL

- Nitrogen is optional on soybeans.
- For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.



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SOIL ANALYSIS

Client:
Henry Farmers Co-op
Rodney Gallimore
1211 W. Wood
Paris TN 38242-1056

Grower:
GARLIN ELLIS

Report No: Cust No: 09-113-0577 01179

Date Printed:

04/24/2009

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Date Received :

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Lab Number: 03034

Field Id:

Sample Id: 30-2

			SOI	TEST RATI	NGS		Calculate	
Test	Results	Wery Low	Low	Medium	Optimum 🚵	Versitlene	Exchange	Capacity
Soil pH	6.0				1		11.	.0
Buffer pH	7.61						meq/	1000
Phosphorus (P)	28 LB/ACRE							
Potassium (K)	240 LB/ACRE						Calculate Satur	
Calcium (Ca)	2458 LB/ACRE							
Magnesium (Mg)	288 LB/ACRE						%K	2.8
Sulfur (S)	20 LB/ACRE						%Ca	55.9
Boron (B)	1.8 LB/ACRE						%Mg	10.9
Copper (Cu)	3.2 LB/ACRE						%H	28.4
Iron (Fe)	318 LB/ACRE			7.			%Na	2.3
Manganese (Mn)	314 LB/ACRE	46.0	4.63					
Zinc (Zn)	2.6 LB/ACRE						K:Mg	Ratio
Sodium (Na)	114 LB/ACRE					1	0.2	range .
Soluble Salts								- 10000
Organic Matter	1.7 % ENR 78							
Nitrate Nitrogen								

SOIL FERTILITY GUIDELINES

Crop: CORN-NO TILL Yield Goal: 150 BU Rec Units: LB/ACRE

(lbs) Lif	ΛΕ (tons)	N	P ₂ O ₅	K.₂0	Mg	S	В	Cu	Mn	Zn	Fe
2000	1	183	96	102	0	11	0	0	0	3.2	
Crop : SOYBEA	NS-NO TILL			Yield	Goal : 50	BU		Rec U	nits:		LB/ACRE
The second secon											

Comments:

CORN-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- · For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.

SOYBEANS-NO TILL

- · Nitrogen is optional on soybeans.
- For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.



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SOIL ANALYSIS

Report No: 09-113-0577 Grower: Client: Cust No: 01179 Henry Farmers Co-op **GARLIN ELLIS** Date Printed: 04/24/2009 Rodney Gallimore Date Received: 04/23/2009 1211 W. Wood Paris TN 38242-1056 PO: Page: 20 of 24

Lab Number: 03035 Field Id: Sample Id: 38-1

			SOII	_ TEST RATIN	NGS		Calculate	
Test	Results	Livery Low	Low	Medium	Optimum	Yery Hillians	Exchange	Capacity
Soil pH	6.2						7.5	8
Buffer pH	7.76						meq/1	
Phosphorus (P)	164 LB/ACRE				TEME		<u> </u>	
Potassium (K)	154 LB/ACRE						Calculate Satura	
Calcium (Ca)	1966 LB/ACRE]	-		
Magnesium (Mg)	132 LB/ACRE		and the second				%K	2.5
Sulfur (S)	22 LB/ACRE						%Ca	63.0
Boron (B)	1.2 LB/ACRE						%Mg	7.1
Copper (Cu)	3.4 LB/ACRE						%Н	24.6
lron (Fe)	870 LB/ACRE				Company of the Compan		%Na	2.7
Manganese (Mn)	400 LB/ACRE							
Zinc (Zn)	3.8 LB/ACRE						K:Mg	Ratio
Sodium (Na)	98 LB/ACRE						0.30	
Soluble Salts							••••	-
Organic Matter	1.7 % ENR 78							
Nitrate Nitrogen								

SOIL FERTILITY GUIDELINES

Crop: SOYBEANS-NO TILL				Yield	Yield Goal: 50			BU Rec Units:			
(lbs) Lil	ΛΕ (tons)	N	P ₂ O ₅	K 20	Mg	S	В	Cu	Mn	Zn	Fe
1000	0.5	0	30	97	0	14	0	0	0	0	
Crop : CORN-N	IO TILL			Yield	Goal: 150	BU		Rec U	nits:		LB/ACRE

 Crop : CORN-NO TILL
 Yield Goal : 150
 BU
 Rec Units:
 LB/ACF

 1000
 0.5
 183
 30
 114
 0
 10
 0.8
 0
 0
 2.6

Comments :

SOYBEANS-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- · Nitrogen is optional on soybeans.
- For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.

CORN-NO TILL

- · Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- · For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.



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SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower: **GARLIN ELLIS**

Report No: Cust No:

09-113-0577 01179

Date Printed:

04/24/2009

Date Received:

04/23/2009

PO:

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Lab Number: 03036

Field Id:

Sample Id: 35-1

	Dk-		SOI	L TEST RATIN	NGS		Calculate	d Cation
Test	Results	Very Low	Low	Medium	Optimum	VerdHigh e	Exchange	Capacity
Soil pH	5.9						_	4
Buffer pH	7.74						5.	4
Phosphorus (P)	124 LB/ACRE		7				meq/	100g
Potassium (K)	148 LB/ACRE						Calculate	
Calcium (Ca)	1018 LB/ACRE						Satur	ation
Magnesium (Mg)	106 LB/ACRE		449				%K	3.5
Sulfur (S)	16 LB/ACRE						%Ca	47.1
Boron (B)	1.0 LB/ACRE						%Mg	8.2
Copper (Cu)	2.0 LB/ACRE		- 100				%Н	38.5
Iron (Fe)	416 LB/ACRE						%Na	2.4
Manganese (Mn)	240 LB/ACRE							
Zinc (Zn)	3.4 LB/ACRE			1			17. 88	
Sodium (Na)	60 LB/ACRE						K:Mg	
Soluble Salts							0.4	3
Organic Matter	1.3 % ENR 70						1	
Nitrate Nitrogen								

SOIL FERTILITY GUIDELINES

Crop: SOYBEANS-NO TILL

Yield Goal: 50

BU

Rec Units:

LB/ACRE

(lbs) []	ME (tons)	N	P, O ₅	K 20	Mg	S	В	Cu	Mn	Zn	Fe
1500	0.75	0	30	98	14	17	0.5	0	0	0	
Crop : CORN-N	NO TILL			Yield	Goal: 150	BU		Rec U	nite:		LB/ACRE
Ciop : Corner					OUAL . 100			1100 0	iiitə.		LDIACKE

Comments:

SOYBEANS-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- Nitrogen is optional on soybeans.
- For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.

CORN-NO TILL

- Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- · For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.



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SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower: GARLIN ELLIS

Report No: Cust No: 09-113-0577 01179

Date Printed:

Rec Unite:

04/24/2009

Date Received :

04/23/2009

PO:

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I R/ACDE

Lab Number: 03037

Field Id:

Sample Id: 35-2

Test	Results	SOIL TEST RATINGS	Calculated	
		Yelytaw Low Medium Optimum Very Hinters	Exchange C	Capacity
Soil pH	6.3		6.7	,
Buffer pH	7.78		İ	
Phosphorus (P)	62 LB/ACRE		meq/10	00g
Potassium (K)	110 LB/ACRE		Calculated	
Calcium (Ca)	1664 LB/ACRE		Saturat	ion
Magnesium (Mg)	122 LB/ACRE		%K	2.1
Sulfur (S)	16 LB/ACRE		%Ca	62.1
Boron (B)	0.8 LB/ACRE		%Mg	7.6
Copper (Cu)	3.6 LB/ACRE		%Н	26.3
Iron (Fe)	348 LB/ACRE	The state of the s	%Na	2.6
Manganese (Mn)	398 LB/ACRE		ļ	
Zinc (Zn)	3.4 LB/ACRE			
Sodium (Na)	80 LB/ACRE		K:MgR	
Soluble Salts			0.28	
Organic Matter	1.0 % ENR 64		ı	
Nitrate Nitrogen			i	
		7	ı	

SOIL FERTILITY GUIDELINES

Crop: SOYBEANS-NO TILL	Yield Goal: 50 BU	

•				1101	4 00ui . 00	50		IVEC O	mis.		LDIACILE
(lbs)	LIME (tons)	N	P ₂ O ₅	K 20	Mg	S	В	Cu	Mn	Zn	Fe
0	0	0	30	108	8	17	0.5	0	0	0	
Crop : CORI	N-NO TILL			Yield	i Goal : 1 50	BU		Rec U	nits:		LB/ACRE
0	0	183	68	130	8	12	1.2	0	0	2.8	

Comments:

SOYBEANS-NO TILL

- · Nitrogen is optional on soybeans.
- For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.

CORN-NO TILL

- · Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- · For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.

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SOIL ANALYSIS

Client: Henry Farmers Co-op Rodney Gallimore 1211 W. Wood Paris TN 38242-1056 Grower: GARLIN ELLIS

Report No: Cust No: 09-113-0577 01179

Date Printed:

04/24/2009

Date Received :

04/23/2009

PO:

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Lab Number: 03038

Field Id:

Sample Id: 32-1

Test	Results	SOIL TEST RATINGS	Calculated	
Soil pH	5.8	Low Medium Optimum Very Holl 1	Exchange C	apacity
Buffer pH	7.66	-	7.8	
Phosphorus (P)	106 LB/ACRE		meq/10)0g
Potassium (K)	154 LB/ACRE	The state of the s	Calculated	
Calcium (Ca)	1648 LB/ACRE		Saturat	
Magnesium (Mg)	148 LB/ACRE		%K	2.5
Sulfur (S)	18 LB/ACRE		%Ca	52.8
Boron (B)	0.8 LB/ACRE		%Mg	7.9
Copper (Cu)	2.8 LB/ACRE		%Н	34.9
Iron (Fe)	456 LB/ACRE		%Na	1.5
Manganese (Mn)	364 LB/ACRE		/01 4 a	1.5
Zinc (Zn)	5.4 LB/ACRE			
Sodium (Na)	54 LB/ACRE		K:MgR	atio
Soluble Salts			0.32	
Organic Matter	1.4 % ENR 72			
Nitrate Nitrogen				
		7		

SOIL FERTILITY GUIDELINES

Crop: SOYBEANS-NO TILL

Yield Goal: 50

BU

Rec Units:

LB/ACRE

(lbs) []	ME (tons)	N	P, O.	K 20	Mg	S	Б			-	
2500	1.25	0	30	97	0	16	0.5	Cu 0	Mn 0	Zn O	Fe
Crop : CORN-N	NO TILL			Viole	Goal : 150	BU	L	B - 11			
.,				Helu	1 Goal: 150	Вυ		Rec U	nits:	4	LB/ACRE

Comments:

SOYBEANS-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- · Nitrogen is optional on soybeans.
- · For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.

CORN-NO TILL

- Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.



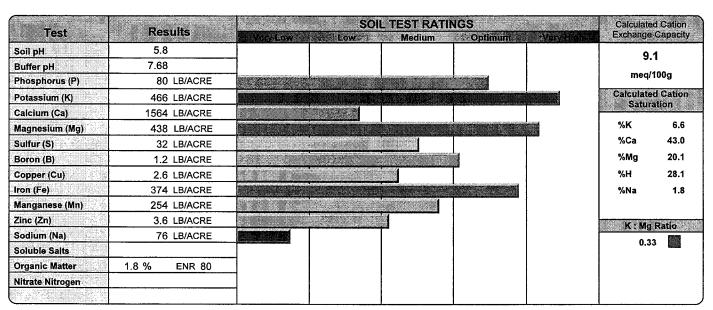
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SOIL ANALYSIS

Client: 09-113-0577 Grower: Report No: Henry Farmers Co-op 01179 **GARLIN ELLIS** Cust No: Rodney Gallimore Date Printed: 04/24/2009 1211 W. Wood Date Received: 04/23/2009 Paris TN 38242-1056 PO: Page: 24 of 24

Lab Number: 03039 Field Id: Sample Id: 13-2



SOIL FERTILITY GUIDELINES

Crop: SOYBE	ANS-NO TILL			Yield	i Goal : 50	BU		Rec Ur	nits:	i	LB/ACRE
(lbs) LIN	ME (tons)	N	P ₂ O ₅	K ₂0	Mg	s	В	Cu	Mn	Zn	Fe
2000	4	0	20	40	^	40					

2000	1	0	30	4 0	0	12	0	0	0	0		
Crop : CORN-N	IO TILL			Yield	Yield Goal: 150		BU Rec Units:			LB/ACRE		
2000	1	183	59	40	0	9	0.8	0	0	2.7		

Comments:

SOYBEANS-NO TILL

Limestone application is targeted to bring soil pH to 6.5.

- · Nitrogen is optional on soybeans.
- · For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.

CORN-NO TILL

- · Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.
- · For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.
- · If N is supplied to corn through the irrigation system, make 3-4 equal applications at 7-10 day intervals, beginning at the 6th leaf stage.



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SOIL ANALYSIS

09-084-0582 Client: Grower: Report No: Henry Farmers Co-op **BILLY SUTTON Cust No:** 16944 Date Printed: 03/26/2009 Rodney 'PRECISION AG ACCT' Date Received: 03/25/2009 1211 W. Wood PO: Paris TN 38242-1056 Farm ID: 954 Page: 1 of 4

Lab Number: 11072

Field Id:

Sample Id: 1A-1

	4	SOIL TEST RATINGS	Calculated Cation
Test	Results	Constitute Low Medium Optimum Salus Communication	Exchange Capacity
Soil pH	6.4		8.7
Buffer pH	7.76		ı
Phosphorus (P)	48 LB/ACRE	The Contract of Contract Contract of Contr	meq/100g
Potassium (K)	148 LB/ACRE		Calculated Cation Saturation
Calcium (Ca)	2168 LB/ACRE		
Magnesium (Mg)	184 LB/ACRE		%K 2.2
Sulfur (S)	22 LB/ACRE		%Ca 62.3
Boron (B)	0.8 LB/ACRE		%Mg 8.8
Copper (Cu)	3.6 LB/ACRE		%H 22.1
Iron (Fe)	214 LB/ACRE		%Na 4.3
Manganese (Mn)	192 LB/ACRE		
Zinc (Zn)	5.2 LB/ACRE		K: Mg Ratio
Sodium (Na)	174 LB/ACRE		0.25
Soluble Salts			0.20
Organic Matter	2.4 % ENR 92		
Nitrate Nitrogen			

SOIL FERTILITY GUIDELINES

Crop: BERMU	JDAGRASS HAY	Yield Goal : 5		TONS		Rec Units:		LB/ACRE			
(lbs) []	VIE (tons)	N	P, O 5	K 2 0	Mg	S	В	Cu	Mn	Zn	Fe
0	0	225	68	193	0	10	0.5	0	0	0	
Crop:						•		Rec U	nits:		

Comments :

BERMUDAGRASS HAY

- · To establish coastal or hybrid bermuda apply the phosphorus and potassium and 30 to 50 lbs N/acre before sprigging.
- After sprigs start to grow, topdress with 40-60 lbs N/Acre. Topdress with an additional 30-40 lbs N/Acre in August or early September if needed.
- · For grass hay apply 50 lbs. N/Acre for each ton of expected yield. The normal range is 200-500 lbs. N/Acre. Apply 75-100 lbs. N/Acre when spring growth begins and 75-100 lbs. N/Acre after each harvest.
- · On light soils with high grass hay yields, soil test annually to maintain soil pH and nutrient level.
- For soils low in sulfur, apply 20-40 lbs of sulfur as a sulfate in the spring with the nitrogen.
- · For grass hay or pasture needing high rates split the P and K application. Apply 1/2 in the spring and 1/2 in late summer.



2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440



SOIL ANALYSIS

09-084-0582 Client: Grower: Report No: 16944 Henry Farmers Co-op **BILLY SUTTON** Cust No: Date Printed: 03/26/2009 Rodney 'PRECISION AG ACCT' Date Received: 03/25/2009 1211 W. Wood PO: Paris TN 38242-1056 Farm ID: 954 Page: 2 of 4

Lab Number: 11073

Field Id:

Sample ld : 2-1

+	Results	SOIL TEST RATINGS	Calculated Cation
Test	Results	County Low Medium Optimum 200	Exchange Capacity
Soil pH	6.2		9.9
Buffer pH	7.66		meq/100g
Phosphorus (P)	62 LB/ACRE		
Potassium (K)	228 LB/ACRE		Calculated Cation Saturation
Calcium (Ca)	2298 LB/ACRE		
Magnesium (Mg)	240 LB/ACRE		%K 3.0
Sulfur (S)	28 LB/ACRE		%Ca 58.0
Boron (B)	1.0 LB/ACRE		%Mg 10.1
Copper (Cu)	3.8 LB/ACRE		%H 27.5
Iron (Fe)	228 LB/ACRE		%Na 1.8
Manganese (Mn)	140 LB/ACRE		
Zinc (Zn)	4.6 LB/ACRE		K: Mg Ratio
Sodium (Na)	80 LB/ACRE		0.29
Soluble Salts			3,50
Organic Matter	2.1 % ENR 86		
Nitrate Nitrogen			

SOIL FERTILITY GUIDELINES

Crop: BERMU	DAGRASS HAY	Yield Goal: 5		TONS		Rec Units:		LB/ACRE			
(lbs) LIN	E (tons)	Ň	P ₂ O ₅	K ₂0	Mg	S	В	Cu	Mn	Zn	Fe
1500	0.75	225	60	160	0	10	0.5	0	0	0	
Crop :								Rec U	nits:		
Terrasa astro											

Comments :

BERMUDAGRASS HAY

Limestone application is targeted to bring soil pH to 6.5.

- · To establish coastal or hybrid bermuda apply the phosphorus and potassium and 30 to 50 lbs N/acre before sprigging.
- · After sprigs start to grow, topdress with 40-60 lbs N/Acre. Topdress with an additional 30-40 lbs N/Acre in August or early September if needed.
- For grass hay apply 50 lbs. N/Acre for each ton of expected yield. The normal range is 200-500 lbs. N/Acre. Apply 75-100 lbs. N/Acre when spring growth begins and 75-100 lbs. N/Acre after each harvest.
- · On light soils with high grass hay yields, soil test annually to maintain soil pH and nutrient level.
- · For soils low in sulfur, apply 20-40 lbs of sulfur as a sulfate in the spring with the nitrogen.
- For grass hay or pasture needing high rates split the P and K application. Apply 1/2 in the spring and 1/2 in late summer.

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2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440



SOIL ANALYSIS

Client: Grower: Report No: 09-084-0582 Henry Farmers Co-op **BILLY SUTTON** 16944 Cust No: Date Printed: 03/26/2009 Rodney 'PRECISION AG ACCT' Date Received: 03/25/2009 1211 W. Wood PO: Paris TN 38242-1056 Farm ID: 954 Page: 3 of 4

Lab Number: 11074

Field Id:

Sample Id: 1B-1

_	a di Para		SOIL TEST RATINGS						
Test	Results	2.53000,41000	Low	Medium	Optimum - AND	Exchange Capacity			
Soil pH	6.5					8.7			
Buffer pH	7.72								
Phosphorus (P)	92 LB/ACRE			· Contract	6 E	meq/100g			
Potassium (K)	196 LB/ACRE					Calculated Cat			
Calcium (Ca)	2050 LB/ACRE		A TO BY STORY AND A STORY OF THE STORY OF TH				23.2		
Magnesium (Mg)	220 LB/ACRE						2.9		
Sulfur (S)	32 LB/ACRE					%Ca 58	8.9		
Boron (B)	0,6 LB/ACRE					%Mg 10	0.5		
Copper (Cu)	2.8 LB/ACRE					%H 25	5.7		
Iron (Fe)	254 LB/ACRE					%Na 1	1.5		
Manganese (Mn)	198 LB/ACRE								
Zinc (Zn)	6.2 LB/ACRE					K : Mg Ratio			
Sodium (Na)	60 LB/ACRE	0.0000000			T	0.27			
Soluble Salts						0.27			
Organic Matter	2.3 % ENR 90								
Nitrate Nitrogen			ļ						
						•			

SOIL FERTILITY GUIDELINES

Crop: BERMUDAGRASS HAY				Yield	Yield Goal: 5		TONS		Rec Units:		LB/ACRE		
(lbs) L	IME (tons)	N [*]	P205	K₂0	Mg	s	В	Cu	Mn	Zn	Fe		
0	0	225	35	174	0	9	1.0	0	0	0			
Crop:								Rec U	nits:				

Comments:

BERMUDAGRASS HAY

- · To establish coastal or hybrid bermuda apply the phosphorus and potassium and 30 to 50 lbs N/acre before sprigging,
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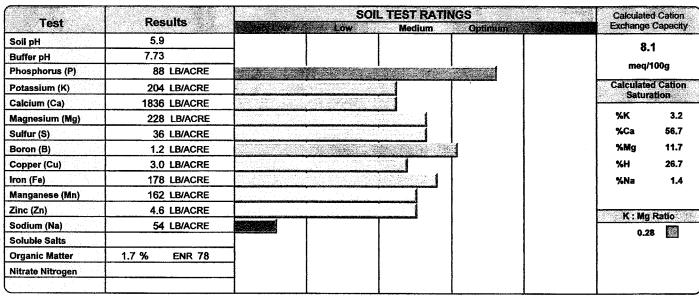


SOIL ANALYSIS

Client: Grower: 09-084-0582 Report No: Henry Farmers Co-op **BILLY SUTTON** 16944 Cust No: Rodney Date Printed: 03/26/2009 'PRECISION AG ACCT' Date Received: 03/25/2009 1211 W. Wood PO: Paris TN 38242-1056 Farm ID: 954 Page: 4 of 4

Lab Number: 11076 Field ld:

Sample Id: 4-1



SOIL FERTILITY GUIDELINES

Crop: BERMUDAGRASS HAY				Yield Goal : 5				Rec Units:		LB/ACRE	
(lbs) LIN	IE (tons)	N	P2 05	K ₂O	Mg	S	В	Cu	Mn	Zn	Fe
1500	0.75	225	37	171	0	9	0	0	0	0	
Crop:				,				Rec U	nits:		

Comments:

BERMUDAGRASS HAY

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