

State of North Carolina
Department of Environment and Natural Resources
Division of Water Resources

Animal Waste Management Systems

Request for Certificate of Coverage

Facility Currently Covered by an Expiring State Non-Discharge General Permit

On September 30, 2014, the North Carolina State Non-Discharge General Permits for Animal Waste Management Systems will expire. As required by these permits, facilities that have been issued Certificates of Coverage to operate under these State Non-Discharge General Permits must apply for renewal at least 180 days prior to their expiration date. Therefore, all applications must be received by the Division of Water Resources by no later than **April 1, 2014**.

Please do not leave any question unanswered. Please verify all information and make any necessary corrections below.

Application must be signed and dated by the Permittee.

1. Facility Number: 240095 and Certificate of Coverage Number: AWS240095
2. Facility Name: Jerry Johnson Farm
3. Landowner's name (same as on the Waste Management Plan): Jerry Johnson
4. Landowner's mailing address: 1649 Silverspoon Rd
City/State: Evergreen NC Zip: 28438
Telephone Number (include area code): (910)654-3872 E-mail: _____
5. Facility's physical address: Old Hwy 74 5122 ~~Old Hwy 74~~ Chadbourn, NC 28431
City: _____ State: _____ Zip: _____
6. County where facility is located: Columbus
7. Farm Manager's name (If different than the Landowner): _____
8. Farm Manager's telephone number (include area code): _____
9. Integrator's name (if there is not an integrator write "None"): Murphy-Brown LLC
10. Operator in Charge (OIC) name: Jerry Johnson Telephone Number _____ OIC # AWA 20422
11. Lessee's name (if there is not a lessee write "None"): _____
12. Indicate animal operation type and number:

Swine

Wean to Finish
Wean to Feeder
Farrow to Finish
Feeder to Finish 3200
Farrow to Wean
Farrow to Feeder
Boar/Stud
Gilts
Other

Horses - Horses
Horses - Other

Cattle

Dairy Calf
Dairy Heifer
Milk Cow
Dry Cow
Beef Stocker Calf
Beef Feeder
Beef Brood Cow
Other

Sheep - Sheep
Sheep - Other

Dry Poultry

Non Laying Chickens
Laying Chickens
Turkeys
Other
Pullets
Turkey Poults

Wet Poultry

Non Laying Pullets
Layers

Mail one (1) copy of the most recent Waste Utilization Plan (WUP) along with the field maps for this facility with this completed and signed application as required by NC General Statutes 143-215.10C(d) to the address below. The WUP must be signed by the owner and a certified technical specialist.

As a second option to mailing paper copies of the application package, you can scan and email one signed copy of the application and the WUP to: animalpermits@ncdenr.gov

I attest that this application has been reviewed by me and is accurate and complete to the best of my knowledge. I understand that, if all required parts of this application are not completed and that if all required supporting information and attachments are not included, this application package will be returned to me as incomplete. **Note:** In accordance with NC General Statutes 143-215.6A and 143-215.6B, any person who knowingly makes any false statement, representation, or certification in any application *may be* subject to civil penalties up to \$25,000 per violation. (18 U.S.C. Section 1001 provides a punishment by a fine of not more than \$10,000 or imprisonment of not more than 5 years, or both for a similar offense.)

Printed Name of Signing Official (Landowner, or if multiple Landowners all landowners should sign. If Landowner is a corporation, signature should be by a principal executive officer of the corporation):

Name: Jerry L. Johnson Title: Owner
Signature: Jerry Johnson Date: 3-11-2014

Name: _____ Title: _____
Signature: _____ Date: _____

Name: _____ Title: _____
Signature: _____ Date: _____

THE COMPLETED APPLICATION SHOULD BE SENT TO THE FOLLOWING ADDRESS:

NCDENR-DWR
Animal Feeding Operations Branch
1636 Mail Service Center
Raleigh, North Carolina 27699-1636

Telephone number: (919) 807-6464
E-mail: animalpermits@ncdenr.gov

Nutrient Management Plan For Animal Waste Utilization

02-29-2012

This plan has been prepared for:

Jerry Johnson Farm
Jerry Johnson
1649 Silverspoon Road
Evergreen, NC 28438
9108402703

This plan has been developed by:

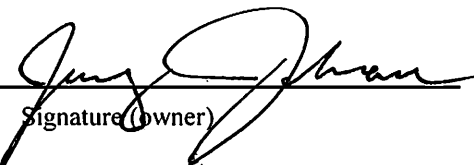
Ronnie G. Kennedy Jr.
Agriment Services, Inc.
PO Box 1096
Beulaville, NC 28518
252-568-2648

Developer Signature

Type of Plan: Nitrogen Only with Manure Only

Owner/Manager/Producer Agreement

I (we) understand and agree to the specifications and the operation and maintenance procedures established in this nutrient management plan which includes an animal waste utilization plan for the farm named above. I have read and understand the Required Specifications concerning animal waste management that are included with this plan.


Signature (owner)

2-29-12
Date

Signature (manager or producer)

Date

This plan meets the minimum standards and specifications of the U.S. Department of Agriculture - Natural Resources Conservation Service or the standard of practices adopted by the Soil and Water Conservation Commission.

Plan Approved By:


Technical Specialist Signature

2-29-12
Date

Nutrients applied in accordance with this plan will be supplied from the following source(s):

Commercial Fertilizer is not included in this plan.

S7	Swine Feeder-Finish Lagoon Liquid waste generated 2,966,400 gals/year by a 3,200 animal Swine Finishing Lagoon Liquid operation. This production facility has waste storage capacities of approximately 0 days.				
Estimated Pounds of Plant Available Nitrogen Generated per Year					
Broadcast	6832				
Incorporated	11734				
Injected	12922				
Irrigated	7426				
	Max. Avail. PAN (lbs) *	Actual PAN Applied (lbs)	PAN Surplus/ Deficit (lbs)	Actual Volume Applied (Gallons)	Volume Surplus/ Deficit (Gallons)
Year 1	7,426	8071	-645	3,223,900	-257,500

Note: In source ID, S means standard source, U means user defined source.

* Max. Available PAN is calculated on the basis of the actual application method(s) identified in the plan for this source.

Narrative

This plan was created from the previous technical specialist plan created by Sonya Barber.

The table shown below provides a summary of the crops or rotations included in this plan for each field. Realistic Yield estimates are also provided for each crop in the plan. In addition, the Leaching Index for each field is shown, where available.

Planned Crops Summary

Tract	Field	Total Acres	Useable Acres	Leaching Index (LI)	Soil Series	Crop Sequence	RYE
1745	6A-B	3.23	3.23	N/A	Goldsboro	Small Grain Overseed	1.0 Tons
						Common Bermudagrass Pasture	4.9 Tons
1745	7A-B	4.35	4.35	N/A	Goldsboro	Small Grain Overseed	1.0 Tons
						Common Bermudagrass Pasture	4.9 Tons
1745	8A-B	1.91	1.91	N/A	Goldsboro	Small Grain Overseed	1.0 Tons
						Common Bermudagrass Pasture	4.9 Tons
1745	9A	1.97	1.97	N/A	Goldsboro	Small Grain Overseed	1.0 Tons
						Common Bermudagrass Pasture	4.9 Tons
1745	9B	2.52	2.52	N/A	Goldsboro	Small Grain Overseed	1.0 Tons
						Common Bermudagrass Pasture	4.9 Tons
1745	9C	3.20	3.20	N/A	Goldsboro	Small Grain Overseed	1.0 Tons
						Common Bermudagrass Pasture	4.9 Tons
8503	1	4.10	4.10	N/A	Lynchburg	Small Grain Overseed	1.0 Tons
						Common Bermudagrass Pasture	4.1 Tons
8503	1B	1.10	1.10	N/A	Goldsboro	Small Grain Overseed	1.0 Tons
						Common Bermudagrass Pasture	4.9 Tons
8503	2	3.20	3.20	N/A	Lynchburg	Small Grain Overseed	1.0 Tons
						Common Bermudagrass Pasture	4.1 Tons
8503	2B	0.75	0.75	N/A	Goldsboro	Small Grain Overseed	1.0 Tons
						Common Bermudagrass Pasture	4.9 Tons
8503	3	3.20	3.20	N/A	Lynchburg	Small Grain Overseed	1.0 Tons
						Common Bermudagrass Pasture	4.1 Tons
8503	3B	0.80	0.80	N/A	Goldsboro	Small Grain Overseed	1.0 Tons
						Common Bermudagrass Pasture	4.9 Tons
8503	4	3.60	3.60	N/A	Lynchburg	Small Grain Overseed	1.0 Tons
						Common Bermudagrass Pasture	4.1 Tons
8503	4B	2.50	2.50	N/A	Lynchburg	Small Grain Overseed	1.0 Tons
						Common Bermudagrass Pasture	4.1 Tons
8503	5B	1.10	1.10	N/A	Lynchburg	Small Grain Overseed	1.0 Tons
						Common Bermudagrass Pasture	4.1 Tons

PLAN TOTALS: 37.53 37.53

<i>LI</i>	<i>Potential Leaching</i>	<i>Technical Guidance</i>
< 2	Low potential to contribute to soluble nutrient leaching below the root zone.	None
>= 2 & <= 10	Moderate potential to contribute to soluble nutrient leaching below the root zone.	Nutrient Management (590) should be planned.
> 10	High potential to contribute to soluble nutrient leaching below the root zone.	Nutrient Management (590) should be planned. Other conservation practices that improve the soils available water holding capacity and improve nutrient use efficiency should be considered. Examples are Cover Crops (340) to scavenge nutrients, Sod-Based Rotations (328), Long-Term No-Till (778), and edge-of-field practices such as Filter Strips (393) and Riparian Forest Buffers (391).

The Waste Utilization table shown below summarizes the waste utilization plan for this operation. This plan provides an estimate of the number of acres of cropland needed to use the nutrients being produced. The plan requires consideration of the realistic yields of the crops to be grown, their nutrient requirements, and proper timing of applications to maximize nutrient uptake.

This table provides an estimate of the amount of nitrogen required by the crop being grown and an estimate of the nitrogen amount being supplied by manure or other by-products, commercial fertilizer and residual from previous crops. An estimate of the quantity of solid and liquid waste that will be applied on each field in order to supply the indicated quantity of nitrogen from each source is also included. A balance of the total manure produced and the total manure applied is included in the table to ensure that the plan adequately provides for the utilization of the manure generated by the operation.

Waste Utilization Table

Year 1

Tract	Field	Source ID	Soil Series	Total Acres	Use Acres	Crop	RYE	Applic. Period	Nitrogen PA Nutrient Req'd (lbs/A)	Comm. Fert. Nutrient Applied (lbs/A)	Res. (lbs/A)	Applic. Method	Manure PA Nutrient Applied (lbs/A)	Liquid Manure Applied (acre)	Solid Manure Applied (acre)	Liquid Manure Applied (Field)	Solid Manure Applied (Field)
									N	N	N		N	1000 gal/A	Tons	1000 gals	tons
1745	6A-B	S7	Goldsboro	3.23	3.23	Small Grain Overseed	1.0 Tons	10/1-3/31	50	0	0	Irrig.	50	19.97	0.00	64.51	0.00
1745	6A-B	S7	Goldsboro	3.23	3.23	Common Bermudagrass Pasture	4.9 Tons	*3/15-9/30	*184	0	0	Irrig.	184	73.50	0.00	237.40	0.00
1745	7A-B	S7	Goldsboro	4.35	4.35	Small Grain Overseed	1.0 Tons	10/1-3/31	50	0	0	Irrig.	50	19.97	0.00	86.88	0.00
1745	7A-B	S7	Goldsboro	4.35	4.35	Common Bermudagrass Pasture	4.9 Tons	*3/15-9/30	*184	0	0	Irrig.	184	73.50	0.00	319.71	0.00
1745	8A-B	S7	Goldsboro	1.91	1.91	Small Grain Overseed	1.0 Tons	10/1-3/31	50	0	0	Irrig.	50	19.97	0.00	38.15	0.00
1745	8A-B	S7	Goldsboro	1.91	1.91	Common Bermudagrass Pasture	4.9 Tons	*3/15-9/30	*184	0	0	Irrig.	184	73.50	0.00	140.38	0.00
1745	9A	S7	Goldsboro	1.97	1.97	Small Grain Overseed	1.0 Tons	10/1-3/31	50	0	0	Irrig.	50	19.97	0.00	39.35	0.00
1745	9A	S7	Goldsboro	1.97	1.97	Common Bermudagrass Pasture	4.9 Tons	*3/15-9/30	*184	0	0	Irrig.	184	73.50	0.00	144.79	0.00
1745	9B	S7	Goldsboro	2.52	2.52	Small Grain Overseed	1.0 Tons	10/1-3/31	50	0	0	Irrig.	50	19.97	0.00	50.33	0.00
1745	9B	S7	Goldsboro	2.52	2.52	Common Bermudagrass Pasture	4.9 Tons	*3/15-9/30	*184	0	0	Irrig.	184	73.50	0.00	185.21	0.00
1745	9C	S7	Goldsboro	3.20	3.20	Small Grain Overseed	1.0 Tons	10/1-3/31	50	0	0	Irrig.	50	19.97	0.00	63.91	0.00
1745	9C	S7	Goldsboro	3.20	3.20	Common Bermudagrass Pasture	4.9 Tons	*3/15-9/30	*184	0	0	Irrig.	184	73.50	0.00	235.19	0.00
8503	I	S7	Lynchburg	4.10	4.10	Small Grain Overseed	1.0 Tons	10/1-3/31	50	0	0	Irrig.	50	19.97	0.00	81.89	0.00
8503	I	S7	Lynchburg	4.10	4.10	Common Bermudagrass Pasture	4.1 Tons	*3/15-9/30	*154	0	0	Irrig.	154	61.51	0.00	252.21	0.00
8503	1B	S7	Goldsboro	1.10	1.10	Small Grain Overseed	1.0 Tons	10/1-3/31	50	0	0	Irrig.	50	19.97	0.00	21.97	0.00
8503	1B	S7	Goldsboro	1.10	1.10	Common Bermudagrass Pasture	4.9 Tons	*3/15-9/30	*184	0	0	Irrig.	184	73.50	0.00	80.85	0.00

Waste Utilization Table

Year 1

Tract	Field	Source ID	Soil Series	Total Acres	Use Acres	Crop	RYE	Applic. Period	Nitrogen PA Nutrient Req'd (lbs/A)	Comm. Fert. Nutrient Applied (lbs/A)	Res. (lbs/A)	Applic. Method	Manure PA Nutrient Applied (lbs/A)	Liquid Manure Applied (acre)	Solid Manure Applied (acre)	Liquid Manure Applied (Field)	Solid Manure Applied (Field)
									N	N	N		N	1000 gal/A	Tons	1000 gals	tons
8503	2	S7	Lynchburg	3.20	3.20	Small Grain Overseed	1.0 Tons	10/1-3/31	50	0	0	Irrig.	50	19.97	0.00	63.91	0.00
8503	2	S7	Lynchburg	3.20	3.20	Common Bermudagrass Pasture	4.1 Tons	*3/15-9/30	*154	0	0	Irrig.	154	61.51	0.00	196.85	0.00
8503	2B	S7	Goldsboro	0.75	0.75	Small Grain Overseed	1.0 Tons	10/1-3/31	50	0	0	Irrig.	50	19.97	0.00	14.98	0.00
8503	2B	S7	Goldsboro	0.75	0.75	Common Bermudagrass Pasture	4.9 Tons	*3/15-9/30	*184	0	0	Irrig.	184	73.50	0.00	55.12	0.00
8503	3	S7	Lynchburg	3.20	3.20	Small Grain Overseed	1.0 Tons	10/1-3/31	50	0	0	Irrig.	50	19.97	0.00	63.91	0.00
8503	3	S7	Lynchburg	3.20	3.20	Common Bermudagrass Pasture	4.1 Tons	*3/15-9/30	*154	0	0	Irrig.	154	61.51	0.00	196.85	0.00
8503	3B	S7	Goldsboro	0.80	0.80	Small Grain Overseed	1.0 Tons	10/1-3/31	50	0	0	Irrig.	50	19.97	0.00	15.98	0.00
8503	3B	S7	Goldsboro	0.80	0.80	Common Bermudagrass Pasture	4.9 Tons	*3/15-9/30	*184	0	0	Irrig.	184	73.50	0.00	58.80	0.00
8503	4	S7	Lynchburg	3.60	3.60	Small Grain Overseed	1.0 Tons	10/1-3/31	50	0	0	Irrig.	0	0.00	0.00	0.00	0.00
8503	4	S7	Lynchburg	3.60	3.60	Common Bermudagrass Pasture	4.1 Tons	*3/15-9/30	*154	0	0	Irrig.	154	61.51	0.00	221.45	0.00
8503	4B	S7	Lynchburg	2.50	2.50	Small Grain Overseed	1.0 Tons	10/1-3/31	50	0	0	Irrig.	50	19.97	0.00	49.93	0.00
8503	4B	S7	Lynchburg	2.50	2.50	Common Bermudagrass Pasture	4.1 Tons	*3/15-9/30	*154	0	0	Irrig.	154	61.51	0.00	153.79	0.00
8503	5B	S7	Lynchburg	1.10	1.10	Small Grain Overseed	1.0 Tons	10/1-3/31	50	0	0	Irrig.	50	19.97	0.00	21.97	0.00
8503	5B	S7	Lynchburg	1.10	1.10	Common Bermudagrass Pasture	4.1 Tons	*3/15-9/30	*154	0	0	Irrig.	154	61.51	0.00	67.67	0.00
Total Applied, 1000 gallons																3,223.90	
Total Produced, 1000 gallons																2,966.40	
Balance, 1000 gallons																-257.50	
Total Applied, tons																	0.00
Total Produced, tons																	0.00
Balance, tons																	0.00

Notes: 1. In the tract column, ~ symbol means leased, otherwise, owned. 2. Symbol * means user entered data.

The Irrigation Application Factors for each field in this plan are shown in the following table. Infiltration rate varies with soils. If applying waste nutrients through an irrigation system, you must apply at a rate that will not result in runoff. This table provides the maximum application rate per hour that may be applied to each field selected to receive wastewater. It also lists the maximum application amount that each field may receive in any one application event.

Irrigation Application Factors

Tract	Field	Soil Series	Application Rate (inches/hour)	Application Amount (inches)
1745	6A-B	Goldsboro	0.50	1.0
1745	7A-B	Goldsboro	0.50	1.0
1745	8A-B	Goldsboro	0.50	1.0
1745	9A	Goldsboro	0.50	1.0
1745	9B	Goldsboro	0.50	1.0
1745	9C	Goldsboro	0.50	1.0
8503	1	Lynchburg	0.50	1.0
8503	1B	Goldsboro	0.50	1.0
8503	2	Lynchburg	0.50	1.0
8503	2B	Goldsboro	0.50	1.0
8503	3	Lynchburg	0.50	1.0
8503	3B	Goldsboro	0.50	1.0
8503	4	Lynchburg	0.50	1.0
8503	4B	Lynchburg	0.50	1.0
8503	5B	Lynchburg	0.50	1.0

The following Lagoon Sludge Nitrogen Utilization table provides an estimate of the number of acres needed for sludge utilization for the indicated accumulation period. These estimates are based on average nitrogen concentrations for each source, the number of animals in the facility and the plant available nitrogen application rates shown in the second column.

Lagoon sludge contains nutrients and organic matter remaining after treatment and application of the effluent. At clean out, this material must be utilized for crop production and applied at agronomic rates. In most cases, the priority nutrient is nitrogen but other nutrients including phosphorous, copper and zinc can also be limiting. Since nutrient levels are generally very high, application of sludge must be carefully applied.

Sites must first be evaluated for their suitability for sludge application. Ideally, effluent spray fields should not be used for sludge application. If this is not possible, care should be taken not to load effluent application fields with high amounts of copper and zinc so that additional effluent cannot be applied. On sites vulnerable to surface water moving to streams and lakes, phosphorous is a concern. Soils containing very high phosphorous levels may also be a concern.

Lagoon Sludge Nitrogen Utilization Table

Crop	Maximum PA-N Rate lb/ac	Maximum Sludge Application Rate 1000 gal/ac	Minimum Acres 5 Years Accumulation	Minimum Acres 10 Years Accumulation	Minimum Acres 15 Years Accumulation
Swine Feeder-Finish Lagoon Sludge - Standard					
Corn 120 bu	150	13.16	40.12	80.23	120.35
Hay 6 ton R.Y.E.	300	26.32	20.06	40.12	60.17
Soybean 40 bu	160	14.04	37.61	75.22	112.83

The Available Waste Storage Capacity table provides an estimate of the number of days of storage capacity available at the end of each month of the plan. Available storage capacity is calculated as the design storage capacity in days minus the number of days of net storage volume accumulated. The start date is a value entered by the user and is defined as the date prior to applying nutrients to the first crop in the plan at which storage volume in the lagoon or holding pond is equal to zero.

Available storage capacity should be greater than or equal to zero and less than or equal to the design storage capacity of the facility. If the available storage capacity is greater than the design storage capacity, this indicates that the plan calls for the application of nutrients that have not yet accumulated. If available storage capacity is negative, the estimated volume of accumulated waste exceeds the design storage volume of the structure. Either of these situations indicates that the planned application interval in the waste utilization plan is inconsistent with the structure's temporary storage capacity.

Available Waste Storage Capacity

Source Name	Design Storage Capacity (Days)	
Start Date		
Plan Year	Month	Available Storage Capacity (Days) *

* Available Storage Capacity is calculated as of the end of each month.

Required Specifications For Animal Waste Management

- 1. Animal waste shall not reach surface waters of the state by runoff, drift, manmade conveyances, direct application, or direct discharge during operation or land application. Any discharge of waste that reaches surface water is prohibited.**
- 2. There must be documentation in the design folder that the producer either owns or has an agreement for use of adequate land on which to properly apply the waste. If the producer does not own adequate land to properly dispose of the waste, he/she shall provide evidence of an agreement with a landowner, who is within a reasonable proximity, allowing him/her the use of the land for waste application. It is the responsibility of the owner of the waste production facility to secure an update of the Nutrient Management Plan when there is a change in the operation, increase in the number of animals, method of application, receiving crop type, or available land.**
- 3. Animal waste shall be applied to meet, but not exceed, the nitrogen needs for realistic crop yields based upon soil type, available moisture, historical data, climatic conditions, and level of management, unless there are regulations that restrict the rate of applications for other nutrients.**
- 4. Animal waste shall be applied to land eroding less than 5 tons per acre per year. Waste may be applied to land eroding at more than 5 tons per acre per year but less than 10 tons per acre per year provided grass filter strips are installed where runoff leaves the field (see USDA, NRCS Field Office Technical Guide Standard 393 - Filter Strips).**
- 5. Odors can be reduced by injecting the waste or by disking after waste application. Waste should not be applied when there is danger of drift from the land application field.**
- 6. When animal waste is to be applied on acres subject to flooding, waste will be soil incorporated on conventionally tilled cropland. When waste is applied to conservation tilled crops or grassland, the waste may be broadcast provided the application does not occur during a season prone to flooding (see "Weather and Climate in North Carolina" for guidance).**

- 7. Liquid waste shall be applied at rates not to exceed the soil infiltration rate such that runoff does not occur offsite or to surface waters and in a method which does not cause drift from the site during application. No ponding should occur in order to control odor and flies.**
- 8. Animal waste shall not be applied to saturated soils, during rainfall events, or when the soil surface is frozen.**
- 9. Animal waste shall be applied on actively growing crops in such a manner that the crop is not covered with waste to a depth that would inhibit growth. The potential for salt damage from animal waste should also be considered.**
- 10. Nutrients from waste shall not be applied in fall or winter for spring planted crops on soils with a high potential for leaching. Waste/nutrient loading rates on these soils should be held to a minimum and a suitable winter cover crop planted to take up released nutrients. Waste shall not be applied more than 30 days prior to planting of the crop or forages breaking dormancy.**
- 11. Any new swine facility sited on or after October 1, 1995 shall comply with the following: The outer perimeter of the land area onto which waste is applied from a lagoon that is a component of a swine farm shall be at least 50 feet from any residential property boundary and canal. Animal waste, other than swine waste from facilities sited on or after October 1, 1995, shall not be applied closer than 25 feet to perennial waters.**
- 12. Animal waste shall not be applied closer than 100 feet to wells.**
- 13. Animal waste shall not be applied closer than 200 feet of dwellings other than those owned by the landowner.**
- 14. Waste shall be applied in a manner not to reach other property and public right-of-ways.**

15. Animal waste shall not be discharged into surface waters, drainageways, or wetlands by a discharge or by over-spraying. Animal waste may be applied to prior converted cropland provided the fields have been approved as a land application site by a "technical specialist". Animal waste shall not be applied on grassed waterways that discharge directly into water courses, and on other grassed waterways, waste shall be applied at agronomic rates in a manner that causes no runoff or drift from the site.
16. Domestic and industrial waste from washdown facilities, showers, toilets, sinks, etc., shall not be discharged into the animal waste management system.
17. A protective cover of appropriate vegetation will be established on all disturbed areas (lagoon embankments, berms, pipe runs, etc.). Areas shall be fenced, as necessary, to protect the vegetation. Vegetation such as trees, shrubs, and other woody species, etc., are limited to areas where considered appropriate. Lagoon areas should be kept mowed and accessible. Berms and structures should be inspected regularly for evidence of erosion, leakage, or discharge.
18. If animal production at the facility is to be suspended or terminated, the owner is responsible for obtaining and implementing a "closure plan" which will eliminate the possibility of an illegal discharge, pollution, and erosion.
19. Waste handling structures, piping, pumps, reels, etc., should be inspected on a regular basis to prevent breakdowns, leaks, and spills. A regular maintenance checklist should be kept on site.
20. Animal waste can be used in a rotation that includes vegetables and other crops for direct human consumption. However, if animal waste is used on crops for direct human consumption, it should only be applied pre-plant with no further applications of animal waste during the crop season.
21. Highly visible markers shall be installed to mark the top and bottom elevations of the temporary storage (pumping volume) of all waste treatment lagoons. Pumping shall be managed to maintain the liquid level between the markers. A marker will be required to mark the maximum storage volume for waste storage ponds.

- 22. Waste shall be tested within 60 days of utilization and soil shall be tested at least annually at crop sites where waste products are applied. Nitrogen shall be the rate-determining nutrient, unless other restrictions require waste to be applied based on other nutrients, resulting in a lower application rate than a nitrogen based rate. Zinc and copper levels in the soils shall be monitored and alternative crop sites shall be used when these metals approach excessive levels. pH shall be adjusted and maintained for optimum crop production. Soil and waste analysis records shall be kept for a minimum of five years. Poultry dry waste application records shall be maintained for a minimum of three years. Waste application records for all other waste shall be maintained for five (5) years.**
- 23. Dead animals will be disposed of in a manner that meets North Carolina regulations.**

Crop Notes

The following crop note applies to field(s): 1, 2, 3, 4, 4B, 5B

Small Grain: CP, Mineral Soil, low-leachable

In the Coastal Plain, oats and barley should be planted from October 15-October 30; and rye from October 15-November 20. For barley, plant 22 seed/drill row foot and increase the seeding rate by 5% for each week seeding is delayed beyond the optimum time. See the seeding rates table for applicable seeding rate modifications in the current NCSU "Small Grain Production Guide". Also, increase the initial seeding rate by at least 10% when planting no-till. Oats should be planted at 2 bushels/acre and rye at 1-1 1/2 bushels/acre. Plant all these small grains at 1-1 1/2" deep. Adequate depth control is essential. Review the NCSU Official Variety "green book" and information from private companies to select a high yielding variety with the characteristics needed for your area and conditions. Apply no more than 30 lbs/acre N at planting. Phosphorus and potash recommended by a soil test can also be applied at this time. The remaining N should be applied during the months of February-March.

The following crop note applies to field(s): 1B, 2B, 3B, 6A-B, 7A-B, 8A-B, 9A, 9B, 9C

Small Grain: CP, Mineral Soil, low-leachable

In the Coastal Plain, oats and barley should be planted from October 15-October 30; and rye from October 15-November 20. For barley, plant 22 seed/drill row foot and increase the seeding rate by 5% for each week seeding is delayed beyond the optimum time. See the seeding rates table for applicable seeding rate modifications in the current NCSU "Small Grain Production Guide". Also, increase the initial seeding rate by at least 10% when planting no-till. Oats should be planted at 2 bushels/acre and rye at 1-1 1/2 bushels/acre. Plant all these small grains at 1-1 1/2" deep. Adequate depth control is essential. Review the NCSU Official Variety "green book" and information from private companies to select a high yielding variety with the characteristics needed for your area and conditions. Apply no more than 30 lbs/acre N at planting. Phosphorus and potash recommended by a soil test can also be applied at this time. The remaining N should be applied during the months of February-March.

The following crop note applies to field(s): 1, 2, 3, 4, 4B, 5B

Common Bermudagrass: No Comment

The following crop note applies to field(s): 1B, 2B, 3B, 6A-B, 7A-B, 8A-B, 9A, 9B, 9C

Common Bermudagrass: No Comment

